

Exhibit 7

1 IN THE UNITED STATES DISTRICT COURT
2 DISTRICT OF NEW JERSEY
3 CAMDEN DIVISION
4
5 IN RE: VALSARTAN)
 LOSARTAN, AND IRBESARTAN)
6 PRODUCTS LIABILITY)
 LITIGATION)
7)
) No. 2875
8)
) HON. ROBERT B. KUGLER
9 This Document Relates to)
 All Actions)
10)
)

11
12 CONFIDENTIAL INFORMATION
13 SUBJECT TO PROTECTIVE ORDER
14 REMOTE
15 VIDEO-RECORDED
16 EXPERT WITNESS TESTIMONY OF
17 DAVID C. CHAN, JR., M.D.

18
19 Thursday, March 3, 2022, 7:49 a.m.
20 - - - -

21
22
23
24 REPORTED BY: ELAINA BULDA-JONES, CSR 11720
25

Page 2

1 APPEARANCES
 2
 3 For the Plaintiffs:
 4 BY: LAYNE HILTON, ESQ.
 5 BY: DAVID STANOCH, ESQ.
 6 Kanner & Whiteley, LLC
 7 701 Camp Street
 8 New Orleans, Louisiana 70130
 9 504.524.5777
 10 D.Stanoch@kanner-law.com
 11 L.hilton@kanner-law.com
 12
 13 BY: NICHOLAS MIGLIACCIO, ESQ.
 14 BY: MARK PATRONELLA, ESQ.
 15 Migliaccio & Rathod LLP
 16 412 H Street NE
 17 Washington, D.C. 20002
 18 202.470.3520
 19 Nmigliaccio@classlawdc.com
 20 Mpatronella@classlawdc.com
 21 BY: RACHEL GEMAN, ESQ.
 22 Lieff Cabraser Heimann & Bernstein, LLP
 23 250 Hudson Street, 8th Floor
 24 New York, New York 10013-1413
 25 212.255.9500
 Rgeman@lchb.com

For the Defendants Teva Pharmaceuticals USA, Inc.;
 Teva Pharmaceutical Industries, Ltd; Actavis LLC;
 and Actavis Pharma, Inc.:

BY: GLENN S. KERNER, ESQ.
 BY: KATE M. WITTLAKE, ESQ.
 Greenberg Traurig LLP
 One Vanderbilt Avenue
 New York, New York 10017
 212.801.9306
 Kernerg@gtlaw.com
 Wittlakek@gtlaw.com

Page 3

1 For the Defendant Albertsons Pharmacy:
 2 BY: ASHLEY JONES, ESQ.
 3 Buchanan Ingersoll & Rooney, P.C.
 4 1700 K Street N.W., Suite 300
 5 Washington, D.C. 20006-3807
 6 202.452.7318
 7 Ashley.Jones@bipc.com

For the Defendant CVS Pharmacy and Rite Aid:

BY: KARA KAPKE, ESQ.
 Barnes & Thornburg, LLP
 2029 Century Park East, Suite 300
 Los Angeles, California 90067
 310.284.3766
 Kara.kapke@btlaw.com

For the Defendants CVS Pharmacy and Rite Aid:

BY: MITCHELL CHARCHALIS, ESQ.
 Barnes & Thornburg, LLP
 2029 Century Park East, Suite 300
 Los Angeles, California 90067
 310.284.3766
 Mcharchalis@btlaw.com

For the Defendant Mylan Laboratories:

BY: FRANK H. STOY, ESQ.
 BY: MELISSA B. CATELLO, ESQ.
 Pietragallo Gordon Alfano
 Bosick & Raspanti, LLP
 One Oxford Centre
 301 Grant Street, 38th Floor
 Pittsburgh, Pennsylvania 15219
 412.263.4397
 FHS@pietragallo.com
 MBC@pietragallo.com

Page 4

1 For the Defendant Hetero Labs:
 2 BY: WILLIAM P. MURTHA, JR., ESQ.
 3 Hill Wallack LLP
 4 2 Bridge Avenue, Suite 211
 5 Red Bank, New Jersey 07701
 6 732.924.8171
 Wmurtha@hillwallack.com

For the Defendants Zhejiang Huahai Pharmaceutical
 Co., Ltd; Princeton Pharmaceutical, Inc.; Huahai
 U.S., Inc.; and Solco Healthcare U.S., LLC

BY: ROBERT KUM, ESQ.
 BY: REBECCA BAZAN, ESQ.
 BY: DANA B. KLINGES, ESQ.
 BY: ALYSON WALKER LOTMAN, ESQ.
 Duane Morris LLP
 865 South Figueroa Street, Suite 3100
 Los Angeles, California 90017-5450
 213.689.7424
 RKum@duanemorris.com
 ReBazan@duanemorris.com
 Dklingses@duanemorris.com
 Alotman@duanemorris.com

For the Defendant Sciengen Pharmaceuticals Inc.:
 BY: GEOFFREY M. COAN, ESQ.
 Hinshaw & Culbertson LLP
 53 State Street, 27th Floor
 Boston, Massachusetts 02109
 617.213.7047
 Gcoan@hinshawlaw.com

Also present:
 Joseph Mourgos, videographer

Page 5

1 INDEX OF EXAMINATIONS
 2
 3 EXAMINATIONS PAGE
 4 MR. MIGLIACCIO 8
 5 MS. HILTON 246
 6 MR. STOY 286
 7 MS. HILTON 290
 8 MR. MIGLIACCIO 291
 9
 10
 11
 12 INDEX OF EXHIBITS
 13 NO. DESCRIPTION PAGE
 14 Chan Exhibit 1 Amended Notice to Take 11
 15 Videotaped Oral Deposition
 16 Chan Exhibit 2 Expert Rebuttal Report of 41
 17 Dr. David Chan, M.D.,
 18 January 12, 2022
 19 Chan Exhibit 3 Invoices, 16 pages 77
 20 Chan Exhibit 4 Expert Report of Professor 165
 21 Zirui Song, M.D., Ph.D., in
 22 Support of Plaintiff's
 23 Motion for Class
 24 Certification
 25 Chan Exhibit 5 Accuracy of Valuations of 205
 Surgical Procedures in the
 Medicare Fee Schedule, David
 C. Chan, M.D., et al
 Chan Exhibit 6 Valuations of Surgical 216
 Procedures in the Medicare
 Fee Schedule, Chan, et al.

<p style="text-align: right;">Page 6</p> <p>1 Chan Exhibit 7 Industry Input in Policy Making: Evidence from Medicare, David C. Chan and Michael J Dickstein 225</p> <p>2</p> <p>3</p> <p>4 Chan Exhibit 8 4.4 Consumer Surplus 262</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 8</p> <p>1 hereinafter set forth.</p> <p>2 EXAMINATION</p> <p>3 BY MR. MIGLIACCIO:</p> <p>4 Q. Good morning, Dr. Chan. My name is Nick</p> <p>5 Migliaccio. I am one of the lawyers for the</p> <p>6 plaintiffs in this case. Thanks for taking time</p> <p>7 with us this morning.</p> <p>8 Could you state your full name for the</p> <p>9 record, please.</p> <p>10 A. Sure. Good morning.</p> <p>11 My name is David Chimin Chan, Junior.</p> <p>12 Q. Okay. And have you ever been deposed</p> <p>13 before?</p> <p>14 A. Yes, I have.</p> <p>15 Q. Okay. I'll go through some ground rules</p> <p>16 even though you've been through it, but I'll -- I'll</p> <p>17 just give them anyway.</p> <p>18 You know, I'm going to ask you a series of</p> <p>19 questions and I'm going to ask that you give me your</p> <p>20 best answers to them and if you don't understand a</p> <p>21 question, I'm going to ask that you tell me and I</p> <p>22 can rephrase it; is that fair?</p> <p>23 A. Yes, thank you.</p> <p>24 Q. Great.</p> <p>25 Are you taking any medication today that</p>
<p style="text-align: right;">Page 7</p> <p>1 THE VIDEOGRAPHER: We are now on the</p> <p>2 record. My name is Joseph Mourgos. I am a</p> <p>3 videographer for Golkow Litigation Services.</p> <p>4 Today's date is March 3rd, 2022, and the</p> <p>5 time on the video monitor is 7:49 a.m. Pacific time.</p> <p>6 This remote video deposition is being held</p> <p>7 in the matter of Valsartan, Losartan and Irbesartan</p> <p>8 Products Liability Litigation MDL Number 2875 for</p> <p>9 the United States District Court, District of</p> <p>10 New Jersey.</p> <p>11 The deponent is Dr. David Chan.</p> <p>12 All parties to this deposition are</p> <p>13 appearing remotely and have agreed to the witness</p> <p>14 being sworn in remotely.</p> <p>15 Due to the nature of remote reporting,</p> <p>16 please pause briefly before speaking to ensure all</p> <p>17 parties are heard completely.</p> <p>18 Counsel has been noted on the stenographic</p> <p>19 record.</p> <p>20 The court reporter is Elaina Bulda-Jones</p> <p>21 and she will now administer the oath.</p> <p>22 DAVID C. CHAN, JR., M.D.,</p> <p>23 called as a witness by the Plaintiffs herein, being</p> <p>24 first duly sworn by the Certified Shorthand Reporter</p> <p>25 was thereupon examined and testified as is</p>	<p style="text-align: right;">Page 9</p> <p>1 would impede your ability to recall events or</p> <p>2 testify truthfully?</p> <p>3 A. No.</p> <p>4 Q. Okay. This is not a marathon session.</p> <p>5 You know, we're not going to try to go through the</p> <p>6 whole thing in one -- one shot. So if -- and I know</p> <p>7 you're a doctor, so obviously, if you have an urgent</p> <p>8 patient call, just tell us, you know, because we</p> <p>9 want you to take care of your patients, you know.</p> <p>10 We understand that.</p> <p>11 So, you know, and we will take breaks, you</p> <p>12 know, and if you need a break just ask for one and</p> <p>13 as long as there's not a, you know, question</p> <p>14 pending, that -- that's totally fine, fair?</p> <p>15 A. Yes, thank you.</p> <p>16 Q. In the other depositions that you had,</p> <p>17 when were those depositions?</p> <p>18 A. I believe they were within the last year</p> <p>19 or two.</p> <p>20 Q. Okay. Got it.</p> <p>21 And I -- you know, we're taking this</p> <p>22 deposition remotely, obviously.</p> <p>23 Do you have anybody else in the room with</p> <p>24 you there?</p> <p>25 A. No.</p>

<p style="text-align: right;">Page 10</p> <p>1 Q. Do you have any documents with you?</p> <p>2 A. No.</p> <p>3 Q. Okay. Great.</p> <p>4 Did you see the deposition notice that we</p> <p>5 sent over in this case?</p> <p>6 A. Are you referring to the most recent one</p> <p>7 about a week -- within a week of this?</p> <p>8 Q. That's right.</p> <p>9 A. I believe I was forwarded either the</p> <p>10 notice or some snippet of the notice.</p> <p>11 Q. Got it.</p> <p>12 I'm going to try to share it with you, so</p> <p>13 forgive me if I fumble with this technology because</p> <p>14 I might. But I'm going to do my best to put this</p> <p>15 into your folder because we're going to have</p> <p>16 exhibits, obviously. And I'm going to -- I watched</p> <p>17 the video, and we'll see if it works. I should</p> <p>18 have, perhaps, practiced this.</p> <p>19 Okay. I believe I put your deposition</p> <p>20 notice in the marked exhibits folder.</p> <p>21 A. Okay. Yep, I'm seeing it now.</p> <p>22 Q. Okay. Great.</p> <p>23 MR. MIGLIACCIO: I want to mark that as</p> <p>24 Exhibit 1. I'm not quite sure how to do that but we</p> <p>25 can address that.</p>	<p style="text-align: right;">Page 12</p> <p>1 Q. I'm referring to that, and I'm referring</p> <p>2 to what we've asked for here in Exhibit A.</p> <p>3 A. Okay.</p> <p>4 Q. So in other words, if there's anything</p> <p>5 that we've asked for here that maybe wasn't included</p> <p>6 on the materials considered list or otherwise not</p> <p>7 provided to -- to us.</p> <p>8 A. That would inform my opinions in the</p> <p>9 report?</p> <p>10 Q. Correct.</p> <p>11 A. Okay. So there was -- there's no other</p> <p>12 document, specific document informing my opinions in</p> <p>13 the report other than my expertise as a physician</p> <p>14 and as a health economist.</p> <p>15 Q. Were there any documents or materials that</p> <p>16 you reviewed in preparation for this deposition that</p> <p>17 were not included in the materials that were</p> <p>18 produced to us?</p> <p>19 A. No.</p> <p>20 Q. So you -- fair to say, then, you haven't</p> <p>21 looked at anything other than the materials that</p> <p>22 you've provided?</p> <p>23 A. The materials on the materials considered</p> <p>24 list; is that right? Yes.</p> <p>25 Q. And the materials that have been provided</p>
<p style="text-align: right;">Page 11</p> <p>1 (Whereupon, Chan Exhibit 1 was marked for</p> <p>2 identification.)</p> <p>3 BY MR. MIGLIACCIO:</p> <p>4 Q. Is this the document that you saw?</p> <p>5 A. I don't think I saw the entire document.</p> <p>6 I think I saw some of the questions and document</p> <p>7 requests.</p> <p>8 Q. Okay. I'm going to look.</p> <p>9 So Exhibit A, which is on page 3, contains</p> <p>10 document requests, right?</p> <p>11 A. Correct.</p> <p>12 Q. Okay. Did you search for those documents</p> <p>13 that were requested?</p> <p>14 A. To the extent that I had the relevant</p> <p>15 documents.</p> <p>16 Q. Was there anything that you were not able</p> <p>17 to find?</p> <p>18 A. No.</p> <p>19 Q. Okay. Were there any documents that you</p> <p>20 reviewed in forming your opinion that were not</p> <p>21 included in the documents that you provided to your</p> <p>22 lawyers and, you know, to us?</p> <p>23 A. Are you referring to the materials</p> <p>24 considered list that informed my opinion in the</p> <p>25 report?</p>	<p style="text-align: right;">Page 13</p> <p>1 to us now?</p> <p>2 A. Correct.</p> <p>3 Q. Okay. Were there any documents that you</p> <p>4 wanted to review but you couldn't get or otherwise</p> <p>5 were not provided?</p> <p>6 A. No.</p> <p>7 Q. Okay. What did you do to prepare for your</p> <p>8 deposition?</p> <p>9 A. What did I do to prepare for this</p> <p>10 deposition in particular or what did I do during the</p> <p>11 course of the case to form my opinions?</p> <p>12 Q. Just to prepare for this deposition in</p> <p>13 particular.</p> <p>14 A. Okay. I reviewed the report. I reviewed</p> <p>15 some of the other reports from Conti, Song, and</p> <p>16 Kaplan.</p> <p>17 I had phone calls with the lawyers, and I</p> <p>18 had phone calls with Analysis Group.</p> <p>19 Q. Who is Analysis Group?</p> <p>20 A. Analysis Group is an economic consulting</p> <p>21 firm.</p> <p>22 Q. And where -- where are they located?</p> <p>23 A. I believe they have a number of different</p> <p>24 offices. Most of the people that I worked with are</p> <p>25 in the Boston office, but there are also people --</p>

<p style="text-align: right;">Page 14</p> <p>1 there's one person that I worked with who's in the 2 Menlo Park office. 3 Q. And when you said you had phone calls with 4 the Analysis Group who did you speak with at the 5 Analysis Group? 6 A. The people that I was in most contact with 7 include several people. So they include Jessica Lu, 8 Michaela Johnson, Brian Ellman, Richard Mortimer, 9 and Molly Freaan. 10 Those were the people that I had the most 11 contact with. 12 Q. So can you tell me who those people are 13 and we can ask -- I'll ask you about them later when 14 we go through your invoice. 15 But can you just briefly tell me who 16 those -- those individuals are? 17 A. Sure. 18 MR. STOY: Object to the form. 19 Go ahead. 20 THE WITNESS: Do you -- could you be a 21 little bit more specific about what do you mean by 22 who they are? 23 BY MR. MIGLIACCIO: 24 Q. Well, I know they work for the Analysis 25 Group. You know, what is -- you know, what is their</p>	<p style="text-align: right;">Page 16</p> <p>1 example, that I don't know exactly who they are. 2 And I can't rule out that there might be 3 some physicians in that group. 4 Q. Who -- who worked on your report? 5 A. Who, for example, might have kind of 6 checked for typos or who might have been in the -- 7 they have an extensive quality control process, I 8 believe, at Analysis Group, to, you know, check -- 9 make sure that all the references that I've looked 10 at are in there, make sure that the document is free 11 of typos, make sure the code is free of errors, make 12 sure that stuff is kind of in the correct folders in 13 the -- in the code and in the input data and the 14 exhibits. 15 So there -- I would expect that there is a 16 fairly big team involved in that, just like there's 17 a team involved in my own research that is involved 18 in quality control. 19 Q. Got it. 20 What did you, you know, read or review to 21 prepare for -- for today's deposition? 22 A. I believe I mentioned I read my report. I 23 read the reports of some of the other experts on the 24 plaintiffs' side, including Dr. Song, Dr. Kaplan, 25 and Dr. Conti.</p>
<p style="text-align: right;">Page 15</p> <p>1 position and how -- what did they do in terms of 2 working with you? 3 MR. STOY: Object to the form. 4 THE WITNESS: So I can tell you that two 5 of them are partners. Richard Mortimer and Brian 6 Ellman are partners. 7 Other members are managers or people that 8 I think are at the level below partners but have 9 quite a bit of experience and, you know, have 10 advanced degrees in economics or management. Those 11 include Michaela Johnson and Jessica Lu. 12 Molly Freaan is another analyst who has a 13 Ph.D. in health policy or health economics. 14 And I believe those are the people that I 15 mentioned that I interacted mostly with. 16 BY MR. MIGLIACCIO: 17 Q. Any physicians in that group? 18 A. No. 19 Q. Okay. Are you the only physician, then, I 20 guess, who worked on this report? 21 A. Of the people that I mentioned, I'm the 22 only physician. There could be other people at 23 Analysis Group that performed very -- that performed 24 a role that -- like a role to check the quality 25 control, the document, or look at the code, for</p>	<p style="text-align: right;">Page 17</p> <p>1 I reviewed some of the primary sources 2 that I relied upon in forming my opinion. I believe 3 those are the main documents that I read in 4 preparation for this deposition. 5 Q. And I think you told me you spoke with 6 lawyers, too? 7 A. Correct. 8 Q. Who -- who did you speak with? 9 A. I don't remember all of the names of the 10 lawyers. But I spoke to Frank Stoy, who's on this 11 call. I spoke to Bob Kum. K-U-M is his last name. 12 Glenn Kerner. Kate Wittlake. 13 I believe those are -- those are the names 14 that I remember speaking to. 15 Q. And how many sessions did you have 16 speaking to -- to the lawyers? 17 A. In preparation for the deposition? 18 Q. Yes. 19 A. I don't remember exactly the number. I 20 want to say something like four sessions, three to 21 four sessions. 22 Q. How long did those sessions each take? 23 A. I think that they could have been as short 24 as two hours or three hours, and they could have 25 also been longer, more like seven hours. Around</p>

<p>Page 18</p> <p>1 that ballpark.</p> <p>2 Q. You may have had one or more, like,</p> <p>3 seven-hour sessions?</p> <p>4 A. Maybe one, correct, one or more.</p> <p>5 Q. All right.</p> <p>6 A. Seven-hour sessions.</p> <p>7 Q. Got it. Got it.</p> <p>8 What was discussed during those sessions?</p> <p>9 MR. STOY: I'm going to object and</p> <p>10 instruct you not to answer.</p> <p>11 That question, Dr. Chan, is -- that's</p> <p>12 obviously covered by the privilege and work product</p> <p>13 doctrine.</p> <p>14 THE WITNESS: Okay.</p> <p>15 MR. MIGLIACCIO: Let me rephrase that.</p> <p>16 Q. Which documents were discussed at those --</p> <p>17 at those sessions?</p> <p>18 MR. STOY: And I'll just -- I'll just give</p> <p>19 a limiting instruction, Dr. Chan.</p> <p>20 If you know, you can answer the question</p> <p>21 about particular documents, but I'd ask you not</p> <p>22 to -- I'd instruct you not to disclose anything in</p> <p>23 particular that was discussed about any documents.</p> <p>24 THE WITNESS: Okay.</p> <p>25 MR. STOY: With that instruction, you can</p>	<p>Page 20</p> <p>1 review the state of the data, like I believe I just</p> <p>2 mentioned that, the state of the data underlying the</p> <p>3 analyses in my report.</p> <p>4 So yes, I did have calls with Analysis</p> <p>5 Group for that purpose.</p> <p>6 Q. And those -- did you have any calls in</p> <p>7 preparation for this deposition with the Analysis</p> <p>8 Group?</p> <p>9 A. Yes, that -- that was just what I</p> <p>10 mentioned.</p> <p>11 Q. Okay. Okay.</p> <p>12 That -- so that -- those calls were not --</p> <p>13 okay. I assume you also had calls with them when</p> <p>14 you were finalizing the report?</p> <p>15 A. Correct.</p> <p>16 Q. But you were just telling me about calls</p> <p>17 in preparation for the deposition?</p> <p>18 A. Right.</p> <p>19 Q. What -- so those calls were -- that --</p> <p>20 that you had with them, were after the report has</p> <p>21 been finalized, right? Because I think the report's</p> <p>22 dated January 12th.</p> <p>23 When did you have those calls with the</p> <p>24 Analysis Group that you just referenced?</p> <p>25 A. The calls -- those calls were in</p>
<p>Page 19</p> <p>1 answer.</p> <p>2 THE WITNESS: I would say that we</p> <p>3 discussed all of the documents that I mentioned in</p> <p>4 general in -- that I used in preparation for this</p> <p>5 deposition, including my report, the reports of some</p> <p>6 of the plaintiffs -- the plaintiff experts,</p> <p>7 including Dr. Song, Dr. Conti, and Dr. Kaplan.</p> <p>8 We also discussed some of the primary</p> <p>9 source material, but I can't remember exactly which</p> <p>10 ones that we discussed.</p> <p>11 BY MR. MIGLIACCIO:</p> <p>12 Q. When you refer to "primary source</p> <p>13 material," what do you mean?</p> <p>14 A. I mean the materials -- some of the</p> <p>15 materials that I considered in forming my opinions</p> <p>16 that are in my materials considered list.</p> <p>17 Q. Got it.</p> <p>18 For the -- did you have preparation</p> <p>19 sessions outside of speaking with the lawyers; in</p> <p>20 other words, did you talk to people, those other</p> <p>21 individuals at the Analysis Group to prepare?</p> <p>22 A. I had calls with the Analysis Group to</p> <p>23 review my report, to review the analyses and the</p> <p>24 data and the code underlying my report.</p> <p>25 I also had -- yeah, I also had sessions to</p>	<p>Page 21</p> <p>1 preparation for the deposition. And they were in</p> <p>2 the last two weeks.</p> <p>3 Q. Two weeks.</p> <p>4 Were any of the lawyers on those calls?</p> <p>5 A. No.</p> <p>6 Q. Okay. How many of those calls did you</p> <p>7 have with the Analysis Group?</p> <p>8 A. Maybe two.</p> <p>9 Q. Two. And how long were those sessions?</p> <p>10 A. I think they were less than four hours</p> <p>11 each, maybe three hours each.</p> <p>12 Q. Got it.</p> <p>13 Did you discuss -- and you said you were</p> <p>14 discussing the state of the data, if I -- if you</p> <p>15 could give me a little more background on that,</p> <p>16 maybe -- I didn't mean to misstate what you said, so</p> <p>17 do I have that right?</p> <p>18 A. Yes.</p> <p>19 MR. STOY: Hang on.</p> <p>20 Before you answer, Dr. Chan, I'm going to</p> <p>21 instruct you not to go into any more detail than</p> <p>22 you've already provided regarding those discussions</p> <p>23 with Analysis Group.</p> <p>24 We'd object on the same basis as before</p> <p>25 with respect to the work product.</p>

<p style="text-align: right;">Page 22</p> <p>1 Nick, you know, I allowed him to give you 2 sort of a high level overview of, you know, the 3 discussion that might have occurred with Analysis 4 Group, but we're not going to go into any more 5 detail than that. 6 MR. MIGLIACCIO: Well, Frank, I mean, I 7 think it's relevant to figure out if -- you know, if 8 the date has changed. I mean, the report was 9 submitted on the 12th of January, and that's what 10 I'm trying to drive at here. 11 MR. STOY: Well, you -- you can ask 12 Dr. Chan if the data has changed. I think he can 13 answer that question. But with respect to 14 particulars about discussions with Analysis Group, 15 my instruction's going to be not to answer those 16 questions. 17 MR. MIGLIACCIO: All right. I'll limit my 18 question for the time being to the -- to the data. 19 Q. Did the data change at the time -- did any 20 data change from the time the report was finalized 21 until now? 22 A. No, none of the data had changed. None of 23 the analyses had changed. It was purely to review 24 what I had already reviewed before. 25 Q. Okay. So there wasn't any new work done,</p>	<p style="text-align: right;">Page 24</p> <p>1 relationship with them? 2 A. I have worked with the Analysis Group on 3 other cases. 4 Q. And how long have you worked with them on 5 other cases? 6 A. I believe my first contact with the 7 Analysis Group was before the pandemic so I think 8 about two to three years. 9 Q. Okay. And I'll -- I'll get into those 10 other cases. 11 But I'll just ask you now, were those 12 other cases cases that you provided reports and/or 13 deposition testimony in? 14 MR. STOY: And before you answer, 15 Dr. Chan, I just want to give you an instruction. 16 You can answer counsel's questions for now 17 with respect to cases where you have been identified 18 as a testifying expert. 19 But for any litigations or other matters 20 where you've been retained as a nontestifying 21 consultant and haven't been publicly disclosed, I 22 would instruct you to not reveal the nature of those 23 disclosures, the parties that retained you, any of 24 that information. 25 With that instruction, you can answer the</p>
<p style="text-align: right;">Page 23</p> <p>1 then, in other words? That -- that's what I'm 2 trying to -- to find out. No subsequent analysis 3 has -- was completed? 4 A. No, that's correct. 5 Q. Okay. Did you -- did you obtain -- how 6 did you get information about this case at the -- at 7 the beginning when you were -- when you started 8 working on it? 9 A. Is your question about before I was 10 retained or after I was retained? 11 Q. Well, how about -- why don't -- I'll ask 12 it this way. 13 Why don't you tell me when you were 14 retained and then we can take it from there. 15 A. I believe I was retained around December 16 of last year. It was a pretty short timeline, 17 but -- as I recall, but I don't remember the 18 exact -- when it exactly -- when I was exactly 19 retained, but I think it was around December of last 20 year. 21 Q. And who -- who contacted you? 22 A. My initial contact was Brian Ellman at the 23 Analysis Group. 24 Q. Do you have a working relationship with 25 the Analysis Group or did you have a prior working</p>	<p style="text-align: right;">Page 25</p> <p>1 question. 2 MR. MIGLIACCIO: I'm -- I'm not asking for 3 any of that information. 4 Q. I'm just asking for where you have 5 prepared a report, you know, that you've been 6 designated as an expert or if you testified at 7 deposition. 8 MR. STOY: Thank you. 9 THE WITNESS: Thank you. 10 I don't know exactly what is in the public 11 record and what is not. I can tell you that I have 12 been deposed in some of these cases. 13 BY MR. MIGLIACCIO: 14 Q. Where you have been working with the 15 Analysis Group? 16 A. Correct. 17 Q. Got it. Okay. 18 So you said December, you think it was 19 around December of last year that you were hired? 20 A. Correct. 21 Q. Got it. 22 And you were contacted by -- I forget the 23 person's name -- can you -- somebody at the Analysis 24 Group, right? 25 A. Right. My initial contact was Brian</p>

<p style="text-align: right;">Page 26</p> <p>1 Ellman at the Analysis Group.</p> <p>2 Q. Ellman. Got it.</p> <p>3 How was that contact initiated?</p> <p>4 A. I believe the first contact was by e-mail.</p> <p>5 Q. Okay. And did you -- have you previously</p> <p>6 worked with Mr. Ellman before?</p> <p>7 A. I had been in conversations with him on</p> <p>8 another case that I was not retained on. The cases</p> <p>9 that I was retained on previously was with another</p> <p>10 individual at Analysis Group as the main contact,</p> <p>11 but I did know Brian from previous conversations.</p> <p>12 Q. Okay. And how did you decide that you</p> <p>13 would agree to -- to offer your opinion in this</p> <p>14 case?</p> <p>15 MR. STOY: Object to the form.</p> <p>16 Go ahead.</p> <p>17 THE WITNESS: Can you restate that</p> <p>18 question?</p> <p>19 BY MR. MIGLIACCIO:</p> <p>20 Q. Right.</p> <p>21 How did you come to determine that you</p> <p>22 would offer an opinion in this case?</p> <p>23 A. Is the question how did I come</p> <p>24 determine -- come to determine that I would agree to</p> <p>25 be involved in this case?</p>	<p style="text-align: right;">Page 28</p> <p>1 that I had related to the case.</p> <p>2 So I received materials that I asked for</p> <p>3 from Analysis Group. And from the lawyers, I</p> <p>4 believe I only received legal documents related to</p> <p>5 the case.</p> <p>6 Q. Were you asked -- I mean, I have a copy of</p> <p>7 your report here and we'll put it up and it's -- you</p> <p>8 know, it's lengthy, right. It's 88 pages or so.</p> <p>9 A. Yes.</p> <p>10 Q. Were you asked to render all of the</p> <p>11 opinions that are within this report initially or</p> <p>12 did the scope of your work evolve over -- over time?</p> <p>13 MR. STOY: Object to the form.</p> <p>14 You can answer.</p> <p>15 THE WITNESS: Would you like to restate</p> <p>16 your question?</p> <p>17 BY MR. MIGLIACCIO:</p> <p>18 Q. Yeah.</p> <p>19 Was -- were you asked to render all of the</p> <p>20 opinions that are here in -- in this report that --</p> <p>21 that you signed in January initially from -- from</p> <p>22 the outset or were -- or were you asked to do a</p> <p>23 smaller subset of them at the outset that later</p> <p>24 expanded?</p> <p>25 MR. STOY: Object to the form.</p>
<p style="text-align: right;">Page 27</p> <p>1 Q. That -- that's fair. Yeah.</p> <p>2 A. Okay. The initial conversation was with</p> <p>3 Brian who told me some basic information about the</p> <p>4 case. He may have provided me the complaint in the</p> <p>5 case. Then I had a discussion with the lawyers</p> <p>6 involved in the case.</p> <p>7 I believe I spent some time thinking about</p> <p>8 the questions involved in the case and what types of</p> <p>9 questions I would want to answer if I were involved</p> <p>10 in the case.</p> <p>11 Then I believe I might have had a</p> <p>12 subsequent discussion with the lawyers and then came</p> <p>13 to the conclusion that this was a case that I would</p> <p>14 agree to be involved in.</p> <p>15 Q. What -- what were you initially told about</p> <p>16 the facts? What facts were you provided initially?</p> <p>17 A. I believe I was mostly just provided legal</p> <p>18 documents involved in the case. The complaint</p> <p>19 involved in the case.</p> <p>20 Q. And did there come a point where you asked</p> <p>21 for other materials?</p> <p>22 A. I've only received legal documents from</p> <p>23 the lawyers. Analysis Group is -- is essentially</p> <p>24 assisting me in my research so I kind of -- I</p> <p>25 directed them to find materials to answer questions</p>	<p style="text-align: right;">Page 29</p> <p>1 You can answer.</p> <p>2 THE WITNESS: My assignment, are you</p> <p>3 asking about the assignment of my case, my</p> <p>4 assignment, whether my assignment was fixed from the</p> <p>5 very beginning or whether my assignment expanded</p> <p>6 over time?</p> <p>7 BY MR. MIGLIACCIO:</p> <p>8 Q. You -- you can answer that question. But</p> <p>9 I may have some further questions for you.</p> <p>10 A. My initial assignment was on the claims</p> <p>11 related to medical monitoring and that involved the</p> <p>12 reports of Dr. Song and Dr. Kaplan.</p> <p>13 I believe at a later point in the case, as</p> <p>14 I was writing my report, given my expertise as an</p> <p>15 economist, I was asked to weigh in on the claim of</p> <p>16 worthlessness by Dr. Conti.</p> <p>17 Q. Got it.</p> <p>18 So that was not part of your initial</p> <p>19 assignment when you -- when you first were retained?</p> <p>20 A. When I was first retained, I believe a lot</p> <p>21 was in flux in the case. I think there was nothing</p> <p>22 set in stone, but my initial instructions were to</p> <p>23 address the claim of medical monitoring.</p> <p>24 Q. What documents -- you said you received</p> <p>25 legal documents at the outset from the lawyers.</p>

<p style="text-align: right;">Page 30</p> <p>1 A. Right.</p> <p>2 Q. Do you recall what those documents were</p> <p>3 that you initially received?</p> <p>4 A. I received the complaint. There was a</p> <p>5 protective order I -- I believe I received. And I</p> <p>6 received reports from some of the plaintiff experts.</p> <p>7 The ones that I can remember are the reports by</p> <p>8 Dr. Song, Dr. Kaplan, and Dr. Conti.</p> <p>9 Q. Okay. When you're talking about the</p> <p>10 complaint, are you referring to the third amended</p> <p>11 medical monitoring complaint?</p> <p>12 A. I don't remember exactly what the name of</p> <p>13 the complaint was. I only received one complaint.</p> <p>14 Q. Got it.</p> <p>15 And that -- you've produced that to us, I</p> <p>16 believe; is that -- is that right?</p> <p>17 A. I believe I have.</p> <p>18 Q. Okay. And what documents did you -- I</p> <p>19 think -- what documents did you ask Analysis Group</p> <p>20 to gather for you after you received the legal</p> <p>21 documents?</p> <p>22 MR. STOY: Object to the form.</p> <p>23 Go ahead.</p> <p>24 THE WITNESS: I can't remember exactly</p> <p>25 which documents. I can tell you in general how my</p>	<p style="text-align: right;">Page 32</p> <p>1 the considerations for various patients who might be</p> <p>2 screened for cancer or who might already be screened</p> <p>3 for cancer for other reasons.</p> <p>4 So those were some of the questions that I</p> <p>5 had initially. I can't remember fully all of the</p> <p>6 questions. But those questions prompted requests</p> <p>7 for documents in a way that is consistent with the</p> <p>8 way that I do research.</p> <p>9 Q. So you had those questions and you</p> <p>10 prompted requests for -- they prompted requests for</p> <p>11 documents to Analysis Group to gather information on</p> <p>12 those questions and provide them to you?</p> <p>13 A. Correct.</p> <p>14 Q. Got it.</p> <p>15 And at Analysis Group, I think you told me</p> <p>16 there were -- there may be some physicians, but did</p> <p>17 you know of any physicians who were gathering that</p> <p>18 information for you when you asked for it?</p> <p>19 MR. STOY: Object to the form.</p> <p>20 THE WITNESS: Would you like to restate</p> <p>21 that question?</p> <p>22 BY MR. MIGLIACCIO:</p> <p>23 Q. Yeah.</p> <p>24 I think you testified that there may be</p> <p>25 some physicians at Analysis Group originally, and I</p>
<p style="text-align: right;">Page 31</p> <p>1 research process works if that would be helpful.</p> <p>2 BY MR. MIGLIACCIO:</p> <p>3 Q. Yeah, let me -- I'll ask you another</p> <p>4 question, then. I'll -- I do -- I'll get into that.</p> <p>5 I think you said, "I directed them to find</p> <p>6 materials to answer questions that I had related to</p> <p>7 the case."</p> <p>8 What initial questions did you have</p> <p>9 related to the case that you sought answers --</p> <p>10 sought -- sought documents for?</p> <p>11 A. I can't remember all of the initial</p> <p>12 questions. I would say that my questions could be</p> <p>13 organized in a way that very much reflects the</p> <p>14 organization of my report.</p> <p>15 So some of the questions were organized</p> <p>16 into what are the various risks of cancer, what are</p> <p>17 the -- what is the state of guidelines regarding</p> <p>18 screening for cancer, what are the various</p> <p>19 technologies that we use for screening cancer, what</p> <p>20 are the various risks that are involved in screening</p> <p>21 for cancer, what are the characteristics of various</p> <p>22 screening tests, like the sensitivity and</p> <p>23 specificity of those screening tests for cancer,</p> <p>24 what are -- what are -- I guess this falls under the</p> <p>25 guidelines for screening for cancer, but what are</p>	<p style="text-align: right;">Page 33</p> <p>1 want to know who you directed these questions to and</p> <p>2 who would be gathering the information to provide to</p> <p>3 you and if you knew if those people were physicians?</p> <p>4 MR. STOY: Objection to form.</p> <p>5 THE WITNESS: As I mentioned, I primarily</p> <p>6 dealt with the people that I named that I was</p> <p>7 interacting with at Analysis Group. There is likely</p> <p>8 a support team to help those people, but those</p> <p>9 people are very knowledgeable in healthcare, very</p> <p>10 knowledgeable in health policy and would interface,</p> <p>11 I think, well if there were a physician on the</p> <p>12 health policy question like a screening guideline.</p> <p>13 So I don't know if they were interfacing</p> <p>14 with any physicians at Analysis Group. They could</p> <p>15 have been.</p> <p>16 BY MR. MIGLIACCIO:</p> <p>17 Q. Got it.</p> <p>18 What -- what arrangements did you come to</p> <p>19 regarding your fee and -- and your fees in the --</p> <p>20 for the report?</p> <p>21 MR. STOY: Object to the form.</p> <p>22 THE WITNESS: Can you restate that</p> <p>23 question?</p> <p>24 BY MR. MIGLIACCIO:</p> <p>25 Q. I mean, do you have an arrangement with</p>

<p style="text-align: right;">Page 34</p> <p>1 respect to fees for -- for the report?</p> <p>2 A. Yes.</p> <p>3 Q. And what is that arrangement?</p> <p>4 A. The arrangement is that I am paid for my</p> <p>5 own time at a rate of \$850 an hour, as stated in my</p> <p>6 report. That is the arrangement that I have with</p> <p>7 the lawyers in this case.</p> <p>8 And I also am paid what's called</p> <p>9 attribution, which is a percentage of the fees that</p> <p>10 Analysis Group charges for the work in support of my</p> <p>11 work.</p> <p>12 Q. Got it.</p> <p>13 What is that percentage that you get for</p> <p>14 attribution?</p> <p>15 A. Is that in my report? I'm not sure --</p> <p>16 THE WITNESS: Is that privileged</p> <p>17 information or is that...</p> <p>18 MR. MIGLIACCIO: I don't think that's</p> <p>19 privileged. I mean, I can talk with Frank about it,</p> <p>20 but I think that directly goes to -- to what -- you</p> <p>21 know, what his compensation is.</p> <p>22 MR. STOY: Yeah, you --</p> <p>23 MR. MIGLIACCIO: Frank, I --</p> <p>24 MR. STOY: You can answer that question,</p> <p>25 Dr. Chan, if you know.</p>	<p style="text-align: right;">Page 36</p> <p>1 about that, but that's something that we can talk</p> <p>2 about off the record.</p> <p>3 MR. MIGLIACCIO: Sure.</p> <p>4 MR. STOY: Your request is noted.</p> <p>5 BY MR. MIGLIACCIO:</p> <p>6 Q. Do your hourly rate -- does your hourly</p> <p>7 rate change for deposition testimony, like do you</p> <p>8 have a day rate for this or is it just -- just an</p> <p>9 hourly rate?</p> <p>10 A. It's just the hourly rate.</p> <p>11 Q. Same rate.</p> <p>12 Trial testimony, different rate, same</p> <p>13 rate?</p> <p>14 A. I believe it's the same rate.</p> <p>15 Q. And file review, I mean, if -- do you</p> <p>16 have -- is that a separate rate or is that the same,</p> <p>17 too?</p> <p>18 A. Same rate for everything.</p> <p>19 Q. Okay. So like fair to say, then, that you</p> <p>20 only have this \$850-an-hour rate for whatever you</p> <p>21 do?</p> <p>22 A. Yes.</p> <p>23 Q. It's that simple. Okay. Got it.</p> <p>24 Have you billed anything -- let me --</p> <p>25 strike that.</p>
<p style="text-align: right;">Page 35</p> <p>1 THE WITNESS: Okay.</p> <p>2 20 percent.</p> <p>3 BY MR. MIGLIACCIO:</p> <p>4 Q. 20 percent.</p> <p>5 So that -- so you receive 20 percent of</p> <p>6 the fees that attribution -- that Analysis Group has</p> <p>7 billed and recovered for this report, too?</p> <p>8 A. Correct.</p> <p>9 Q. Got it.</p> <p>10 Is that reflected in a written agreement</p> <p>11 anywhere?</p> <p>12 A. That's reflected in an agreement that I</p> <p>13 have with the Analysis Group.</p> <p>14 Q. Do we have that agreement? I -- I don't</p> <p>15 recall seeing it.</p> <p>16 A. I don't know.</p> <p>17 MR. MIGLIACCIO: Frank, do you know?</p> <p>18 MR. STOY: I don't believe that is</p> <p>19 something that we've produced.</p> <p>20 MR. MIGLIACCIO: Okay. I'm going to just</p> <p>21 mark for the record that I'm -- you know, we do want</p> <p>22 to see it. Prefer to see it today, if possible, so</p> <p>23 we could -- you know, I think it's directly called</p> <p>24 for by the -- by the Rules and by our request.</p> <p>25 MR. STOY: All right. Well, I'm not sure</p>	<p style="text-align: right;">Page 37</p> <p>1 What percentage of your income, you know,</p> <p>2 would you say comes from -- from your expert work?</p> <p>3 MR. STOY: And you can answer that</p> <p>4 question but you don't have to answer -- you don't</p> <p>5 have to elaborate about, you know, what your income</p> <p>6 level is.</p> <p>7 MR. MIGLIACCIO: I'm not asking for that.</p> <p>8 Q. I'm -- yeah, I'm not asking you for that.</p> <p>9 I understand.</p> <p>10 A. Right. Right.</p> <p>11 I'm not sure I can kind of give you a</p> <p>12 precise figure here. I can maybe tell you the</p> <p>13 percent of my time that I spent, but you're asking</p> <p>14 the percent of my income.</p> <p>15 Q. Right. Right.</p> <p>16 You could tell -- tell me your time and --</p> <p>17 I mean, you can think about the income question. We</p> <p>18 can come back to it later. I understand it's -- you</p> <p>19 might have to do some mental --</p> <p>20 A. Right. Yeah.</p> <p>21 Q. -- mental arithmetic.</p> <p>22 A. I'm afraid that if I answer the income</p> <p>23 question, you're going to back out my income.</p> <p>24 Q. I don't intend to back out your income. I</p> <p>25 just want to get -- I'm not trying to -- and this --</p>

<p style="text-align: right;">Page 38</p> <p>1 I mean, I'm not trying to get at sensitive personal 2 information here. That's not my goal. 3 I just want to see, you know, what you do 4 in terms of, you know, is this a big part of -- of 5 your life or is it a small part? That's what I'm 6 trying to drive at. 7 A. Uh-huh. In terms of the hours that I 8 spend on my work, it's -- I would say it's a 9 relatively small part of my life. 10 If you're -- if you're asking whether this 11 is a small part of my life or a big part of my life, 12 I would say it's -- you know, I spend most of my 13 hours not working on litigation consulting. 14 Q. If I could -- could you ballpark a 15 percentage of the percentage of your time spent on 16 litigation consulting? 17 A. I'm sorry, say that again. 18 Q. Could -- could you ballpark a percentage 19 of the time you spend working on litigation 20 consulting? 21 A. Ballpark would be less than 20 percent. 22 Q. Got it. Got it. 23 I want to ask you some questions about 24 your -- your background. 25 I know, you know, you're a physician and</p>	<p style="text-align: right;">Page 40</p> <p>1 in the Ph.D. in economics at MIT after finishing my 2 residency in internal medicine. I finished my Ph.D. 3 in economics in 2013. 4 And then I had my first job as a faculty 5 here at Stanford. 6 Q. Got it. 7 So you started -- the -- the -- it sounds 8 like you -- you took time -- did you take time off 9 from medical school? Do I have that straight or -- 10 A. It was a leave of absence from medical 11 school. I would say about a third of my class took 12 some form of leave of absence to do some type of 13 research work or some type of fellowship in the 14 middle of med school and mine was to do economics 15 and health policy. 16 Q. Got it. 17 I didn't mean that in a pejorative way to 18 say "time off." I understand a leave of absence. 19 So -- and that's when you -- you became a 20 Marshall Scholar and went to -- to get those 21 degrees? 22 A. Correct. 23 Q. Got it. 24 And I think I have your CV up here now. 25 We can --</p>
<p style="text-align: right;">Page 39</p> <p>1 an economist, you know, and you have multiple 2 degrees. I -- you know, can you walk me through 3 your educational history and kind of what -- just 4 for starters. 5 A. Sure. 6 Would you like to refer to the CV or would 7 you like me to just -- 8 Q. We can pull -- you can go -- you can just 9 go and -- because I can try to get the CV up. I'm 10 sure I'll be able to, you know, once I figure out 11 this technology. I'm not trying to hide it from 12 you. 13 A. Sure. 14 My first degree that I post -- after 15 undergrad that I enrolled in was a medical degree at 16 UCLA. In the middle of that medical degree, I 17 became quite interested in health policy and health 18 economics and I took two years off where I was a 19 Marshall Scholar in England and had two master's 20 degrees in health policy and health economics. 21 After coming back from that, I completed 22 medical school and started my residency program at 23 Brigham and Women's Hospital in Boston. 24 And I kind of knew that I wanted to do a 25 Ph.D. when I came back from England and I enrolled</p>	<p style="text-align: right;">Page 41</p> <p>1 MR. MIGLIACCIO: I'd like to mark the 2 report and the attachments as Exhibit 2. 3 (Whereupon, Chan Exhibit 2 was marked for 4 identification.) 5 BY MR. MIGLIACCIO: 6 Q. And I think it's up there now. 7 A. Okay. Yeah, I see it. 8 Q. Yeah. I see -- I think your CV is 9 Appendix A. 10 A. Right. 11 Q. Yeah. 12 A. Great. 13 Q. Yeah. Great. 14 You -- I see. So that -- and that -- I 15 see. So you -- you start -- did you start medical 16 school directly after college? 17 A. Correct. 18 Q. Okay. And then you took the leave of 19 absence to become a Marshall Scholar to go and get 20 these other degrees and then finish medical school? 21 A. Correct. 22 Q. Got it. 23 And then later, obtained your Ph.D. from 24 MIT? 25 A. Correct.</p>

<p style="text-align: right;">Page 42</p> <p>1 Q. Got it.</p> <p>2 What did you -- in terms of your career as</p> <p>3 a physician, could you walk me through that?</p> <p>4 A. Sure.</p> <p>5 My residency was in internal medicine.</p> <p>6 This was at Brigham and Women's Hospital where I</p> <p>7 spent quite a bit of time in primary care. They</p> <p>8 have a primary care track at -- in this residency</p> <p>9 program. So I spent quite a bit in outpatient</p> <p>10 medicine. But the average -- still the average</p> <p>11 residency program is predominantly inpatient</p> <p>12 medicine, but I spent a little bit more time than</p> <p>13 the average resident in primary care.</p> <p>14 I finished that residency in 2008 and</p> <p>15 that's when I started the Ph.D. program in</p> <p>16 economics.</p> <p>17 During the first year of the Ph.D.</p> <p>18 program, I did not have a steady clinical job. I --</p> <p>19 I worked as a physician as a -- what's called a --</p> <p>20 well, it's a moonlighting position where you would</p> <p>21 kind of put in -- I probably worked maybe 20 nights</p> <p>22 that year or 30 nights that year where you kind of</p> <p>23 worked at a hospital, at the Brigham in particular,</p> <p>24 and I admitted patients at that hospital.</p> <p>25 And then in my second year of the Ph.D.</p>	<p style="text-align: right;">Page 44</p> <p>1 jobs.</p> <p>2 And I had my first kind of staff job where</p> <p>3 I was educating residents at Beth Israel Deaconess</p> <p>4 Medical Center. This was in 2010, starting in</p> <p>5 November of 2010. I had that job all the way until</p> <p>6 I finished my Ph.D. in June of 2013.</p> <p>7 And then after that I came here to</p> <p>8 Palo Alto for an academic appointment at Stanford</p> <p>9 where I was a staff physician in internal medicine</p> <p>10 at the Palo Alto Veterans Affairs Health Care</p> <p>11 System.</p> <p>12 Q. Got it.</p> <p>13 So that first position at Brigham --</p> <p>14 Brigham and Women's, you said that that had a</p> <p>15 significant part of outpatient work? Did I have</p> <p>16 that straight?</p> <p>17 A. It had as much -- had more outpatient</p> <p>18 exposure than the average internal medicine</p> <p>19 residency program.</p> <p>20 Q. And how do you characterize that or</p> <p>21 quantify that?</p> <p>22 A. You can quantify it by the number of</p> <p>23 outpatient weeks that we have. So the typical</p> <p>24 internal medicine residency is structured in terms</p> <p>25 of rotations. You spend some rotations on various</p>
<p style="text-align: right;">Page 43</p> <p>1 program, I had my first clinical job as an attending</p> <p>2 physician at Beth Israel Deaconess Medical Center,</p> <p>3 which you see there.</p> <p>4 Actually, strike that.</p> <p>5 That -- that was actually in the -- near</p> <p>6 the beginning of the third year of my Ph.D. so I</p> <p>7 think I continued to do moonlight -- you can see my</p> <p>8 appointments at hospitals and affiliated</p> <p>9 institutions on my CV.</p> <p>10 Q. Where -- can you just tell me that page</p> <p>11 that is?</p> <p>12 A. This is A -- A-2.</p> <p>13 Q. A-2. Okay.</p> <p>14 A. Yeah, so you could see that...</p> <p>15 Q. Yeah.</p> <p>16 A. Right.</p> <p>17 So I had two positions. I had two</p> <p>18 positions before I was a staff physician at Beth</p> <p>19 Israel Deaconess Medical Center. I was a staff</p> <p>20 physician at Brigham and Women's Hospital, but my</p> <p>21 job there was mainly a moonlighting position.</p> <p>22 And I also later that year, in 2008, was a</p> <p>23 staff physician at McLean Hospital, which is a</p> <p>24 hospital in the Massachusetts General Physicians</p> <p>25 Organization. Both of those jobs were moonlighting</p>	<p style="text-align: right;">Page 45</p> <p>1 inpatient wards. You spend some rotations in the</p> <p>2 emergency department, and you spend some rotation</p> <p>3 doing outpatient care. And this residency program</p> <p>4 that I did had more weeks on inpatient care than the</p> <p>5 typical residency program.</p> <p>6 Q. Got it.</p> <p>7 And did that change at some point where</p> <p>8 you ended up spending more time like as typical</p> <p>9 doing inpatient?</p> <p>10 A. Yes. I -- so after residency you have to</p> <p>11 choose what type of doctor you want to be. You</p> <p>12 could either go on to subspecialty fellowship and</p> <p>13 become, you know, say, a cardiologist or infectious</p> <p>14 disease doctor or you can remain within general</p> <p>15 medicine.</p> <p>16 And within general medicine there are</p> <p>17 generally two types of jobs you could have. One is</p> <p>18 an outpatient job so you spend a hundred -- almost a</p> <p>19 hundred percent of your time as an outpatient</p> <p>20 doctor, increasingly so in the way medicine is</p> <p>21 organized right now.</p> <p>22 Or you could be an inpatient doctor and</p> <p>23 spend close to a hundred percent of your time</p> <p>24 clinically as an inpatient doctor. And I chose the</p> <p>25 latter. So I'm what's called a hospitalist.</p>

<p style="text-align: right;">Page 46</p> <p>1 Q. Hospitalist. Got it. Got it. 2 Did you have any -- as a hospitalist, do 3 you have any specialties or is that -- hospitalist 4 is like a generalist; is that fair? 5 A. Yes, a hospitalist by definition is a 6 general internist who does not have a subspecialty. 7 Q. Okay. 8 A. So internal medicine is their specialty 9 and they have no subspecialty. 10 Q. Do you have any areas of interest takeaway 11 like a formal subspecialty? Do you have any areas 12 of interest? Do hospitalists have that? 13 A. No. Hospitalists are quite general. We 14 see a variety of patients in the inpatient setting. 15 At Palo Alto VA, I see patients who are 16 general medicine patients. I see oncology patients. 17 I see cardiology patients. A wide variety of 18 patients who require hospitalization. 19 Q. Got it. 20 And you've been at Palo Alto VA from 2013 21 to the present? 22 A. Correct. 23 Q. How -- how much time do you -- or have you 24 spent there on average, you know, in that period? 25 A. Right. I spend four weeks a year since I</p>	<p style="text-align: right;">Page 48</p> <p>1 A. Yeah, it's determined by how the 2 hospitalists group decides to schedule rotations. 3 Before I believe this last year, or the last two 4 years, the rotations were two-week blocks. So I 5 generally would work in two two-week blocks every 6 year. 7 Starting about a year or two ago, the 8 group decided to change it so that people would 9 generally work in one-week blocks. And so now I 10 work four one-week blocks. 11 Q. Got it. Got it. 12 And has that been the same like from 2013 13 to the present? 14 A. It has either been one-week blocks or 15 two-week blocks since 2013. 16 Q. Yeah. Got it. 17 Four weeks total? 18 A. Four weeks total. 19 Q. Got it. Got it. 20 In your position in -- in Deaconess and 21 in -- the other hospitals back east, what was your 22 schedule there? 23 I mean, I -- that's kind of broad so 24 I'll -- I don't -- let's just start with Beth 25 Israel.</p>
<p style="text-align: right;">Page 47</p> <p>1 started there at -- in 2013. There are some 2 hospitalists at Palo Alto VA that are full time and 3 I think the full time -- I would have to check but 4 oftentimes the full time -- a full-time hospitalist 5 might see less than -- might be on the wards for 6 less than half of the weeks of the year. So there's 7 never a hospitalist that works all of the weeks of 8 the year. 9 It's quite an intense job, I would say, 10 and so it's not something like outpatient medicine 11 where in outpatient medicine you can be seeing 12 patients every week of the year. In hospital 13 medicine, oftentimes a full-time person is half the 14 weeks of the year. 15 And for an academic hospitalist like me 16 that does research in addition to being a 17 hospitalist you can have a range from four weeks a 18 year to, I would say, as much as seven weeks a year, 19 eight weeks a year, within that range. 20 Q. Got it. 21 Do you do those four weeks a year in a row 22 or do you split them up? 23 A. I split them up. 24 Q. Okay. What is the period -- like the 25 split period that you take? Is it a week or --</p>	<p style="text-align: right;">Page 49</p> <p>1 A. Beth Israel Deaconess, I think my -- I 2 don't know a hundred percent sure, but I believe my 3 schedule was six weeks a year back there. And that 4 is a reflection of just the different hospitals have 5 different kind of norms in terms of what is the 6 number of weeks that academic physicians will work. 7 And so, as I mentioned, six weeks a year is kind of 8 within the range. 9 Q. Got it. 10 What -- and what type of people would 11 you -- what would -- how would you describe the 12 patient population, you know, at Beth Israel 13 Deaconess that you saw? 14 A. It was a fairly general patient 15 population. I would see a number of different -- 16 just the same as in Palo Alto VA, I would see 17 patients with a wide variety of internal medicine 18 complaints ranging from infectious disease to renal 19 to, you know, pulmonology, cardiology, oncology, 20 gastroenterology. 21 There -- there would be a number of 22 different inpatient conditions, that is typical of a 23 hospital medicine practice, that I would see there 24 at Beth Israel Deaconess Medical Center. 25 Q. Okay. Would you say there's a difference</p>

<p style="text-align: right;">Page 50</p> <p>1 at the -- at a VA hospital, like, is the patient 2 population any different than at Beth Israel? 3 A. The patient population at the VA is 4 predominantly male still. I would say it's 5 90 percent -- my patients are 90 percent male. At 6 Beth Israel Deaconess, we did not have that. You 7 know, the most obvious kind of structural difference 8 is that the VA sees veterans and most veterans are 9 male. 10 You will also have veterans that tend to 11 be linked to certain wars. So there's veterans of 12 the Vietnam era or veterans of kind of more recent, 13 Iraq and Afghanistan era. So you'll have the age of 14 the veterans kind of coming in waves that are 15 related to wars as opposed to Beth Israel Deaconess 16 we didn't have them. 17 Q. Got it. 18 So you see waves or bands of -- of age 19 ranges? 20 A. Correct. 21 Q. Got it. 22 The moonlighting job, can you tell me a 23 little bit more about what -- what that was? I 24 mean, I -- I don't mean to say "job." The 25 moonlighting schedule, is that better? Schedule?</p>	<p style="text-align: right;">Page 52</p> <p>1 In Palo Alto VA, I solely work with 2 residents, whereas in Beth Israel Deaconess, there 3 was -- there were two different campuses, one in 4 which I worked with residents, the other in which I 5 kind of was more like a community doctor role where 6 I saw the patients alone and interacted directly 7 with the patients and the nurse and didn't have this 8 other group of doctors assisting me as I do now a 9 hundred percent. That would be kind of the only 10 difference. But in general, the jobs were quite 11 similar. 12 Q. Got it. 13 What -- I think you've answered this, but 14 you don't have any specific oncology expertise, is 15 that fair, as a generalist? 16 MR. STOY: Object to the form. 17 THE WITNESS: I would say that I don't 18 have oncology subspecialty training. I do see 19 oncology patients because oncology patients often 20 have medical problems, general medical problems. 21 They get infected. They can get quite sick 22 ultimately in ways that a general internist will 23 deal with. 24 I do not make decisions in terms of 25 initiation of chemotherapy so if there is such a</p>
<p style="text-align: right;">Page 51</p> <p>1 A. Sure. 2 Q. Yeah. 3 A. That was much more -- that was less -- 4 that was a flexible -- the reason people have 5 moonlighting jobs is to allow for flexibility. You 6 don't necessarily commit to a schedule a whole year 7 in advance, which is what I do now. Nowadays, I 8 will say, what years I'm -- I will know which weeks 9 I'm going to be working a whole year in advance. 10 For the moonlighting job, generally, the 11 way that it works is that people sign up for shifts 12 and this signing up of shifts can happen maybe like 13 two weeks in advance or maybe a month in advance. 14 And generally, these would be for one-night shifts 15 or a shift maybe kind of lasting until the day but 16 not a whole week-shift as what I kind of currently 17 work on. 18 Q. Got it. Got it. 19 And did your duties vary as a -- you know, 20 a hospitalist in these -- across these positions or 21 were they similar, would you say? 22 A. I would say they were quite similar 23 despite the fact that they're on different coasts. 24 Medicine I think is quite homogenous across 25 different medical centers.</p>	<p style="text-align: right;">Page 53</p> <p>1 decision like that, I will work in consultation with 2 an oncologist. 3 The way that hospital medicine works is 4 that if it's a general medicine problem on an 5 oncology patient I can -- I have -- you know, I 6 handle that on my own. Sometimes it makes sense to 7 consult subspecialty physicians like cardiologist, 8 oncologist to help in the management of a patient. 9 BY MR. MIGLIACCIO: 10 Q. Got it. 11 And when you consult with an oncologist or 12 cardiologist to help with the management of a 13 patient who requires that, like how does the 14 relationship work between the -- the hospitalist and 15 that specialist? 16 A. It's a collegial relationship. I will ask 17 them to see the patient and render -- I think to use 18 legal terms, render their opinions, and they will 19 provide that information to me and ultimately -- it 20 depends on which hospital it is. 21 At the Palo Alto VA, I'm the -- what's 22 called the attending of record. So I have -- 23 ultimately the decision lies with me. So if -- you 24 know, if you had to point to one decisionmaker, it 25 would be me.</p>

<p style="text-align: right;">Page 54</p> <p>1 That said, I'm going to very much consider 2 what the oncologist or the cardiologist or the 3 nephrologist, you know, the various consultants will 4 kind of provide me. And that information will very 5 much influence what I do. 6 Q. And these are for -- I think you said, and 7 I don't want to put words in your mouth, like this 8 is for a general medicine problems if the patient 9 has such a problem? 10 A. Can you state that again? 11 Q. You're consulting with a specialist if 12 that patient is in your care and they have a problem 13 that's not, you know, an oncology problem or a 14 cardiology problem or -- and -- am I getting this 15 wrong? 16 A. If it's a general medicine problem, then 17 it's fully within my domain to -- 18 Q. Yeah. 19 A. -- make a decision without any input from 20 a consultant. 21 Q. Okay. 22 A. If there is some type of specialized 23 knowledge beyond general medicine that would be 24 helpful in making my decision, then I might consult 25 them.</p>	<p style="text-align: right;">Page 56</p> <p>1 the hospital for pneumonia. That patient I won't 2 consult an oncologist generally. 3 There are other patients where we need to 4 make a decision about changing a chemotherapy 5 regimen. Then I will consult the oncologist. But 6 while the patient is in the hospital, the patient is 7 under my care and the oncologist is secondary. 8 Q. Okay. I think I understand. 9 If somebody -- for purposes of diagnosis 10 of a cancer and initial treatment plan, that would 11 be done by an oncologist? 12 A. For purposes of the treatment plan, like 13 the chemotherapy plan, that would be primarily done 14 by the oncologist. They would have certainly the 15 biggest say in that, with the caveat that the 16 general internist and maybe even the primary care 17 doctor, you're going to try to take the patient's 18 wishes or the patient's preferences into 19 consideration. You have to also consider other 20 comorbidities that the patient has. 21 So it's not purely an oncology decision. 22 It's a holistic decision that's made by generalists 23 and oncologists. 24 With respect to diagnosing cancers, I 25 think that often happens by internist, general</p>
<p style="text-align: right;">Page 55</p> <p>1 The way that it works at Palo Alto VA is 2 that there is no oncology ward where an oncologist 3 is the attending of record so that means all 4 oncology patients will kind of, quote/unquote, 5 belong to me. I am the attending of record for all 6 oncology patients, and I'll be making -- I'm the 7 person -- I'm the single decisionmaker if you were 8 to name one. 9 If there is a specialized question that I 10 would like input on such as a chemotherapy regimen 11 or, you know, something that's specifically about 12 their cancer, then I will generally consult an 13 oncologist. 14 Q. Got it. 15 And so you, as -- as -- in your position 16 at Palo Alto, then, if you have a patient who 17 presents with a cancer, that patient will be under 18 your care or will it -- or -- or jointly under your 19 care and jointly under the care of an oncologist? 20 A. It's hard to define what we mean by 21 "jointly." I would say that some oncology patients 22 we will never consult an oncologist. Some, if their 23 condition is purely medical, for example, you might 24 be an oncology patient to have, like, cancer, you 25 are being treated for this cancer, but you come to</p>	<p style="text-align: right;">Page 57</p> <p>1 internists as opposed to oncologist. Oftentimes the 2 cancer is diagnosed initially by a patient who comes 3 in with a complaint and we find cancer. Then after 4 we find cancer, we refer the patient to an 5 oncologist. So I would say the diagnosis of cancer 6 often happens with generalists. 7 Q. Have you diagnosed cancer before? 8 A. Yes. 9 Q. What -- what types of cancer have you 10 diagnosed? 11 A. Almost all types of cancers, I would say. 12 Q. What is metastatic cancer? 13 A. Metastatic. 14 Q. Metastatic, sorry. 15 A. That is a cancer that has spread to a 16 distant site. 17 Q. Is that type of cancer frequently 18 incurable? 19 MR. STOY: Object to the form. 20 THE WITNESS: I think it depends on the 21 type of cancer. There are some cancers such as 22 leukemia that are widespread. They are quite 23 treatable and quite curable. 24 BY MR. MIGLIACCIO: 25 Q. What are the benefits of finding a cancer</p>

<p style="text-align: right;">Page 58</p> <p>1 early?</p> <p>2 MR. STOY: Object to the form.</p> <p>3 Go ahead.</p> <p>4 THE WITNESS: I think this -- yeah, this</p> <p>5 gets to my report where there -- there could be</p> <p>6 benefits and risks of pursuing a cancer early. When</p> <p>7 you have an earlier cancer, it might be more</p> <p>8 amenable to treatment in a sense that there's</p> <p>9 less -- it has to -- I mean, yeah.</p> <p>10 The cancer needs to be detectable, like if</p> <p>11 the cancer is small enough where it's not</p> <p>12 detectable, then you wouldn't generally operate on</p> <p>13 it to remove it. You also wouldn't give</p> <p>14 chemotherapy.</p> <p>15 So there is, I think, still like an</p> <p>16 optimal time to be thinking about when to detect</p> <p>17 cancer. You don't want to be detecting cancer or</p> <p>18 even try to detect cancer when it's just a few --</p> <p>19 few cells. That would be infeasible.</p> <p>20 And there -- there is also if -- you know,</p> <p>21 the disease burden from cancer is quite advanced and</p> <p>22 for certain cancers, if it's metastatic, it becomes</p> <p>23 harder to -- the patient's life expectancy from</p> <p>24 there is -- is lower and the odds of you</p> <p>25 definitively sending that cancer into remission are</p>	<p style="text-align: right;">Page 60</p> <p>1 a lot of considerations here.</p> <p>2 BY MR. MIGLIACCIO:</p> <p>3 Q. And I'm only asking about the benefits,</p> <p>4 not the costs. I understand that -- that, you know,</p> <p>5 and in your report you lay out your opinions. I</p> <p>6 understand that, you know, but I'm not asking you</p> <p>7 about the downsides. I'm only asking you about the</p> <p>8 upsides.</p> <p>9 MR. STOY: Same objection.</p> <p>10 Go ahead.</p> <p>11 THE WITNESS: Could you state that</p> <p>12 question again?</p> <p>13 BY MR. MIGLIACCIO:</p> <p>14 Q. Yeah.</p> <p>15 What -- what are the benefits, you know,</p> <p>16 not -- not the drawbacks, not the costs, what are</p> <p>17 the benefits of detecting a cancer before it becomes</p> <p>18 metastatic?</p> <p>19 A. It's really kind of hard for me to speak</p> <p>20 generally on this. I think there are a number of</p> <p>21 different types of cancer. This might differ across</p> <p>22 different types of cancer.</p> <p>23 Q. Sure. We can -- we can go through -- we</p> <p>24 can go cancer by cancer.</p> <p>25 Let's talk about, like, let's say,</p>
<p style="text-align: right;">Page 59</p> <p>1 lower as well.</p> <p>2 So it's -- it's -- it's a balance. There</p> <p>3 are -- there are risks and benefits of pursuing a</p> <p>4 cancer early, and I think there is probable an</p> <p>5 optimal time to be thinking about whether somebody</p> <p>6 has cancer.</p> <p>7 MR. STOY: Nick, I don't want to interrupt</p> <p>8 you. If you've got -- you know, if this isn't a</p> <p>9 good spot, but we have been going for a little over</p> <p>10 an hour so, you know, whenever is a good time to</p> <p>11 take a break.</p> <p>12 MR. MIGLIACCIO: Sure. Why don't we just</p> <p>13 take like five more minutes and then we can take a</p> <p>14 break, if that's all right.</p> <p>15 MR. STOY: That's fine.</p> <p>16 MR. MIGLIACCIO: I know -- and even on the</p> <p>17 East Coast here we're close to lunch but we'll sort</p> <p>18 that.</p> <p>19 Q. Can we agree that it's generally</p> <p>20 preferable to detect a cancer before it becomes</p> <p>21 metastatic?</p> <p>22 MR. STOY: Object to the form of the</p> <p>23 question.</p> <p>24 Go ahead.</p> <p>25 THE WITNESS: Yeah, I think there are just</p>	<p style="text-align: right;">Page 61</p> <p>1 prostate cancer.</p> <p>2 A. Uh-huh.</p> <p>3 Q. Which is one example.</p> <p>4 A. Okay.</p> <p>5 Q. What -- what would be the benefits of --</p> <p>6 of catching that before it becomes metastatic?</p> <p>7 A. Even then, even if you focus on a specific</p> <p>8 type of cancer, I think it depends on things that</p> <p>9 are outside of cancer.</p> <p>10 Potentially, if -- if -- you know, again,</p> <p>11 this is a little bit hypothetical, but, you know, if</p> <p>12 you have a patient with metastatic -- as I</p> <p>13 mentioned, if you have a patient with metastatic</p> <p>14 prostate cancer, it becomes harder to treat.</p> <p>15 And this is kind of a very general</p> <p>16 statement. As I mentioned, I am not, you know, an</p> <p>17 oncologist.</p> <p>18 When somebody comes into the hospital and</p> <p>19 has a medical problem, I'm generally treating that</p> <p>20 medical problem. I'm not making chemotherapy</p> <p>21 decisions, so -- and I'm also not following cancer</p> <p>22 patients long-term as well. I'm not directing --</p> <p>23 chemotherapy is usually an outpatient regimen.</p> <p>24 So, you know, I can speak to this in</p> <p>25 general terms, but, you know, I think that there are</p>

<p style="text-align: right;">Page 62</p> <p>1 just so many different factors to consider in -- 2 there are -- it's -- it's a complicated decision 3 that requires, you know, more than just like an 4 inpatient hospitalization, which is what I deal 5 with. 6 Q. Got it. 7 But we can agree that it's easier to 8 treat, then, before it becomes metastatic, a 9 prostate cancer? 10 MR. STOY: Object to the form. 11 THE WITNESS: Again, it depends, but I 12 would say that in many cases, in many cases, it is 13 treating a cancer that has not metastasized, or once 14 a cancer has metastasized, you would need more 15 systemic agents like chemotherapy as opposed to 16 surgery so it rules out certain therapeutic options. 17 And I can at least say that. 18 MR. MIGLIACCIO: Why don't we -- we can 19 take a break now, a quick break, maybe just ten 20 minutes or so. I know we need to figure out what 21 we're going to eat here. 22 MR. STOY: Oh, no, that -- that's fine. 23 I'm more worried about Dr. Chan's lunch and he's 24 still a little ways away. 25 MR. MIGLIACCIO: Yeah.</p>	<p style="text-align: right;">Page 64</p> <p>1 confidentiality order that governs any reports that 2 you might have authored in those cases. 3 So, you know, with that instruction to not 4 reveal any potentially confidential information 5 related to those other engagements, you can answer 6 the question to the extent you can. 7 THE WITNESS: Right. That leaves very 8 little room for me to discuss this. I think I can 9 say that you can see the parties involved in each of 10 these cases, the dates of the case, and I was 11 retained as an expert on the defendants' side. I 12 think I can say that. 13 BY MR. MIGLIACCIO: 14 Q. Okay. For each of those three cases? 15 A. Correct. 16 Q. Okay. And those cases -- were those -- 17 these are not whistleblower cases, are they? Are 18 they -- were the cases themselves filed under seal? 19 A. I don't think they're whistleblower cases. 20 Q. Okay. Can you tell me what you know about 21 the case, with the cases from what you know from the 22 publicly filed documents or complaints that were 23 filed in these cases? 24 A. Are the complaints public? Can I -- are 25 we certain that the complaints are public?</p>
<p style="text-align: right;">Page 63</p> <p>1 MR. STOY: So let's -- 2 MR. MIGLIACCIO: Right. 3 MR. STOY: Let's come back at 12:10, does 4 that work, 12:10 Eastern time? 5 THE VIDEOGRAPHER: All right. We're off 6 the record at 9:01 a.m. 7 (Whereupon, a brief recess was taken.) 8 THE VIDEOGRAPHER: We are back on the 9 record. The time is 9:15 a.m. Pacific time. 10 BY MR. MIGLIACCIO: 11 Q. Okay. All right. 12 Dr. Chan, I want to ask you a few 13 questions about your prior -- the prior reports and 14 opinions or deposition testimony that you offered 15 in -- I think it looks like three other cases that 16 are listed on your CV. I am on -- looking at it 17 right now, it looks like it's Appendix B. Okay. 18 Can you tell me about those cases? You 19 can start with just -- just from the top. 20 A. I don't know how much I can reveal. 21 MR. STOY: Yeah, before you -- before you 22 answer, Dr. Chan, I'll place an objection to the 23 form of the question, and I'll also just caution 24 you, I'm aware that there are protective orders in 25 place in those cases and I believe that there's a</p>	<p style="text-align: right;">Page 65</p> <p>1 Q. Well, that's -- that's why I asked if they 2 were -- if they were filed under seal and that's, 3 you know, what I'm trying to find out. They don't 4 appear to me to be whistleblower cases. They appear 5 to be -- 6 MR. STOY: Yeah, again, I'll just -- I'll 7 put this -- I'll reference my prior instruction and 8 just say, I mean, I think it's okay to talk about 9 the case generally at a high level but just not to 10 reveal anything that, you know, would potentially be 11 confidential. And if you -- if you're not able to 12 answer the question with that instruction, then so 13 be it. 14 But I just wanted to place that on the 15 record. 16 THE WITNESS: Frank, would you instruct me 17 to -- because I just don't know the legal -- the 18 legal details, whether this is the -- the complaints 19 are under seal or not. Am I allowed to discuss 20 the... 21 MR. STOY: Yeah, I don't -- I don't know 22 if -- Nick, if these complaints were filed under 23 seal or -- or what is confidential or what isn't. I 24 just know that there are confidentiality orders in 25 place and --</p>

<p style="text-align: right;">Page 66</p> <p>1 MR. MIGLIACCIO: Uh-huh.</p> <p>2 MR. STOY: -- you know, aspects of his</p> <p>3 report and testimony would be confidential.</p> <p>4 That is the limit of my knowledge so</p> <p>5 that's why I put the instruction that I did on the</p> <p>6 record.</p> <p>7 MR. MIGLIACCIO: Yeah, I understand that.</p> <p>8 And, you know, I do know we asked for this</p> <p>9 information, these transcripts, and I think you</p> <p>10 objected to providing them.</p> <p>11 I -- I think, you know, you could tell us</p> <p>12 the general subject matter of the case. I don't</p> <p>13 think you would be breaching any confidentiality.</p> <p>14 That -- that would be my request, that you tell us.</p> <p>15 MR. STOY: Yeah, I mean, I think he can</p> <p>16 answer a question like, you know, what is -- what's</p> <p>17 the product that was at issue in the case or</p> <p>18 something like that. But I just think, you know,</p> <p>19 it's going to depend on the question. And if the</p> <p>20 question is a really broad one, then it's going to</p> <p>21 be difficult for Dr. Chan to be able to provide an</p> <p>22 answer.</p> <p>23 THE WITNESS: And I would only want to</p> <p>24 reveal what's public information because I wouldn't</p> <p>25 want to divulge anything that's under confidential</p>	<p style="text-align: right;">Page 68</p> <p>1 Q. Okay. These -- these are all -- these</p> <p>2 were deposition -- these aren't trial testimony,</p> <p>3 this is all deposition testimony?</p> <p>4 A. Correct.</p> <p>5 Q. Do you know -- and you were retained by</p> <p>6 the defendants in these respective -- these three</p> <p>7 cases?</p> <p>8 A. I was retained by Janssen Pharmaceuticals.</p> <p>9 There are multiple defendants in this case. And I</p> <p>10 was retained by one of the defendants, which is</p> <p>11 Janssen Pharmaceuticals.</p> <p>12 Q. Okay. Did you -- was your opinion -- did</p> <p>13 you rely upon your expertise as a medical doctor or</p> <p>14 as an economist in -- in offering your opinion?</p> <p>15 A. Both.</p> <p>16 MR. STOY: Object to the form.</p> <p>17 BY MR. MIGLIACCIO:</p> <p>18 Q. All right. Have you -- has your testimony</p> <p>19 been -- been challenged in any of these three cases?</p> <p>20 A. No.</p> <p>21 Q. Do you know what I mean when I say</p> <p>22 "challenged"?</p> <p>23 A. I'm not a legal expert. My understanding</p> <p>24 of your question is that there was a movement by the</p> <p>25 other side to strike my testimony or strike my</p>
<p style="text-align: right;">Page 67</p> <p>1 order. And I -- I just don't know what is under</p> <p>2 confidential order or not. Yeah, I mean...</p> <p>3 MR. STOY: Well, let's wait. I don't</p> <p>4 think there's a question pending right now,</p> <p>5 Dr. Chan, so let's wait and -- wait for a question.</p> <p>6 BY MR. MIGLIACCIO:</p> <p>7 Q. But I mean, there was -- I just wanted to</p> <p>8 know what the general subject matter of the cases</p> <p>9 are. You know, what -- what are the cases about.</p> <p>10 You can -- you can tell me what the product at issue</p> <p>11 is. That -- that's fine.</p> <p>12 What -- what is the product at issue?</p> <p>13 THE WITNESS: Is that okay, Frank?</p> <p>14 MR. STOY: Yeah, I think -- I think you</p> <p>15 can answer that question, if you know.</p> <p>16 THE WITNESS: Right.</p> <p>17 The -- the product at issue in all three</p> <p>18 of these cases are -- were products by Janssen</p> <p>19 pharmaceutical or Johnson & Johnson. They were two</p> <p>20 specific opioid products produced by Janssen</p> <p>21 Pharmaceuticals or Johnson & Johnson.</p> <p>22 BY MR. MIGLIACCIO:</p> <p>23 Q. Not Janssen, Johnson & Johnson?</p> <p>24 A. They're -- I think -- my understanding is</p> <p>25 that Janssen is a subsidiary of Johnson & Johnson.</p>	<p style="text-align: right;">Page 69</p> <p>1 expertise.</p> <p>2 Q. It's to exclude or strike it, yeah,</p> <p>3 that -- that's my question, right.</p> <p>4 A. Right.</p> <p>5 Q. Yeah. And so the answer to that was no?</p> <p>6 A. That's no.</p> <p>7 Q. Okay. Did your testimony include any</p> <p>8 opinion relating to healthcare spending or pricing?</p> <p>9 MR. STOY: Object to the form.</p> <p>10 You can answer that question.</p> <p>11 THE WITNESS: It's hard for me to answer</p> <p>12 that question. It related to healthcare spending.</p> <p>13 Not sure about pricing.</p> <p>14 BY MR. MIGLIACCIO:</p> <p>15 Q. Healthcare spending. Got it.</p> <p>16 And when were you retained in these cases,</p> <p>17 if you can recall?</p> <p>18 A. I believe my first contact was before the</p> <p>19 pandemic so that would mean sometime in 2020,</p> <p>20 earlier 2020.</p> <p>21 Q. And is your work being done in those cases</p> <p>22 also with the Analysis Group?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. In all three of them?</p> <p>25 A. Yes.</p>

<p style="text-align: right;">Page 70</p> <p>1 Q. Okay. Do you have -- what is your 2 relationship with the Analysis Group? Are -- are 3 you a consultant? Are you an owner? Are you an 4 employee? Could you just shed some light on that? 5 MR. STOY: Object to the form. 6 THE WITNESS: As I mentioned, I have a -- 7 an agreement with the Analysis Group that is -- 8 is -- basically allows me to use their services in 9 preparing work for or litigation consulting. I'm 10 not an employee of Analysis Group. I'm what's 11 called an affiliate of Analysis Group. And I 12 believe that just means that I have worked with them 13 in the past and I have a working relationship with 14 Analysis Group. 15 BY MR. MIGLIACCIO: 16 Q. Got it. 17 What was -- I think we -- we -- we 18 discussed this earlier, but what was the process 19 that you used -- I think you've -- you've answered 20 this. 21 Did your process for preparing your report 22 in this case differ for your process in preparing 23 any expert witness report in other cases? 24 MR. STOY: Object to the form. 25 THE WITNESS: Would you like to be more</p>	<p style="text-align: right;">Page 72</p> <p>1 offered opinions in any other litigation? 2 A. No. 3 Q. So -- so these three that you've been 4 deposited in that are listed on Appendix B, and this 5 case, this is the fourth case in total that you have 6 been retained for and offered expert opinions or -- 7 or testimony? 8 I'm not asking for questions about -- I'm 9 not asking for any cases where you may be a 10 consulting expert. I'm asking, you know, where 11 you've been disclosed and provided opinions or 12 deposition testimony. 13 A. And could you clarify to me what you mean 14 by provided expert opinions? Is this -- is this a 15 specific term meaning... 16 Q. A report, like a report. 17 A. A report. Okay. 18 Q. Yeah. 19 A. Thank you. 20 MR. STOY: Dr. Chan, my understanding is 21 he's limiting his question to cases where you've 22 been disclosed as a testifying expert, like in this 23 case, not any case that you might have been retained 24 as a consultant. 25 THE WITNESS: Okay.</p>
<p style="text-align: right;">Page 71</p> <p>1 specific? 2 BY MR. MIGLIACCIO: 3 Q. I think you told me about your process 4 this morning. I'm not sure if you finished your 5 answer, if we finished that line of questioning. 6 But my question is, in the way that you 7 prepared this report, was this -- the way you 8 prepared this report, was it any different from -- 9 from what you've done in -- in other cases, 10 including these three that we just looked at? 11 MR. STOY: Object to the form. 12 You can answer. 13 THE WITNESS: Different from what I 14 described earlier. So I think you are referring to 15 my general process of reading the complaint, 16 thinking about the question, identifying lines of 17 inquiry that I would like more information or 18 analyses. 19 Are you referring -- if you're referring 20 to that, then that is my general process of thinking 21 through my opinions in a case of litigation 22 consulting. 23 BY MR. MIGLIACCIO: 24 Q. Have you -- other than these three 25 reports -- or rather, prior testimony, have you</p>	<p style="text-align: right;">Page 73</p> <p>1 So the answer is yes. These -- these are 2 the only cases that I have been disclosed as an 3 expert. 4 BY MR. MIGLIACCIO: 5 Q. Got it. 6 And -- and -- and the first one looks 7 like -- I mean, you've just started this, you've 8 just started working as a disclosed expert with 9 these four cases, including these three? 10 A. By "just started working," you can see the 11 dates here -- 12 Q. Right. 13 A. -- is that what you mean? 14 Q. Yeah, that -- that's right. I mean, so 15 you -- there's not an earlier part of your career 16 where you provided expert testimony or expert 17 reports in other cases? 18 A. Correct. 19 Q. Okay. Got it. 20 I have -- in your report here you have a 21 list of materials relied upon. Looks like that's 22 exhibit -- it's just Appendix C of your report. 23 Do you have that up there? 24 A. Yes. 25 Q. So you looked at the Consolidated Third</p>

<p>Page 74</p> <p>1 Amended Medical Monitoring Class Action Complaint, 2 Plaintiffs' Memorandum of Law in support of their 3 motion for class certification, and the Third 4 Amended Consolidated Economic Loss Class Action 5 Complaint. 6 A. Correct. 7 Q. And I think you testified to this earlier 8 that you looked at Dr. Conti, Dr. Kaplan, and 9 Dr. Song's reports. 10 You also, I see here, looked at the report 11 of Dr. Panigrahy; is that right? 12 A. I believe so, but I don't particularly 13 remember much about that report. 14 Q. Okay. And then are you aware that -- did 15 you ask to see any other expert reports? 16 A. No. 17 Q. No. 18 Did you -- are you aware that the 19 plaintiffs had put forward general causation expert 20 reports in this case? 21 A. Not very aware that. 22 Q. Are you aware that there were reports by 23 Dr. Etminan, Dr. Hecht, and Dr. Lagana? 24 A. No, I don't know those names. 25 Q. Are you aware of Dr. Daniel Catenacci?</p>	<p>Page 76</p> <p>1 have various data listed, is that right, on the next 2 page? 3 A. Uh-huh. 4 Q. And I'm just going to refer you to the 5 "Medical Expenditure Panel Survey data." 6 Do you see that? 7 A. Yes. 8 Q. Who -- who gathered that data for you? 9 A. I directed the Analysis Group to gather 10 that data, those data. 11 Q. Who is your -- who did you interface with 12 with respect to getting that information? 13 A. Almost all of my calls with the Analysis 14 Group involved the people that I mentioned earlier. 15 All of them. Some of the calls did not include 16 Molly Freaan. But almost all of the calls involved 17 the other four people that I named, Brian Ellman, 18 Frank Mortimer -- Richard Mortimer, Jessica Lu, and 19 Michaela Johnson. And I directed them as a group to 20 get those data. 21 Q. Got it. 22 I want to look at your -- were there any 23 conclusions that you reached that did not make it 24 into your final report? 25 A. No.</p>
<p>Page 75</p> <p>1 A. No, I don't know who that is. 2 Q. Dr. Janice Britt? 3 A. No. 4 Q. Have you ever heard of those names before? 5 A. I've never heard those names before. 6 Q. All right. What was your recollection -- 7 I mean, what is your recollection, as you sit here 8 today, of Dr. Panigrahy's report? 9 A. I don't have much of a recollection at 10 all, actually. I don't know who that person is. 11 I -- I might have seen that report, but I don't 12 remember anything about it. 13 Q. Do you recall anything about the 14 depositions of Judson -- I'm just -- it says, 15 "Depositions and Declarations." 16 A. Oh. 17 Q. And it looks like there are one, two, 18 three, four -- seven of them listed there. 19 A. Uh-huh. I know some of their medical 20 conditions. I know that they're specific named -- 21 named -- named plaintiffs and so I know -- I know 22 their -- as I mention in my report, I know some of 23 their medical conditions. 24 Q. Got it. 25 And then I see further below, "Data," you</p>	<p>Page 77</p> <p>1 Q. And let -- let's look at your -- the 2 invoices. I think I -- I will put -- pull those up 3 for you if we just bear with me for a moment. 4 Did I do it right? Okay. It should -- 5 they should pop up in a few minutes -- or a few 6 seconds. 7 Let me know when you can see them. 8 A. Yes, I can see them. 9 (Whereupon, Chan Exhibit 3 was marked for 10 identification. 11 BY MR. MIGLIACCIO: 12 Q. Okay. Great. 13 This is -- this is the invoice we were 14 provided with. 15 A. Uh-huh. 16 Q. And it's dated February 3rd, 2022. 17 A. Right. 18 Q. And it looks like it was "For professional 19 services rendered in connection with the above 20 referenced case for the period ending December 31, 21 2021." 22 A. Uh-huh. 23 Q. Are there any other invoices or did you 24 spend any other time on this report? 25 MR. STOY: Object to -- object to the</p>

<p style="text-align: right;">Page 78</p> <p>1 form. I think that's two different questions. 2 THE WITNESS: Okay. Yeah. 3 BY MR. MIGLIACCIO: 4 Q. Yeah. First, are there any other invoices 5 that haven't been -- 6 A. I have not yet submitted any other 7 invoices. 8 Q. Okay. Do you have -- do you have a plan 9 to submit another invoice? 10 A. Yes. 11 Q. Okay. And what would be included on that 12 invoice aside from today's deposition or in 13 preparation for the deposition? 14 A. I haven't prepared them yet. Those would 15 be invoices for the months of January and for the 16 month of February. 17 Q. Okay. How much time -- so your report 18 looks like it's dated January 12th, right? 19 A. Right. 20 Q. Could you estimate how much time you spent 21 in the month of January on the report before it was 22 signed and submitted on the 12th? 23 A. Off the top of my head, no. I think it 24 was a significant amount of time given that we were 25 up against a deadline. But off the top of my head,</p>	<p style="text-align: right;">Page 80</p> <p>1 subsequently. Off the top of my head, I don't know 2 what Ph.D. he has, but it's likely -- I believe he's 3 an economist. 4 Q. Ellman, B. Ellman? 5 A. Brian Ellman, I think he has an MBA. I 6 don't remember exactly where the MBA is from. He's 7 an economist and he's a principal. 8 Q. M. Johnson? 9 A. Michaela Johnson, my understanding is a 10 manager is below the level of a partner but is quite 11 experienced, has quite a bit of industry experience 12 as well as consulting experience. She has an MBA 13 from MIT. 14 Q. I. Karagodsky? 15 A. I believe he was on maybe one call or two 16 calls. I don't know him as well. 17 Q. Do you know what qualifications he may 18 have? 19 A. I don't know in particular. 20 Q. Okay. 21 A. I believe it's all -- I would expect that 22 all to be on their website if I wanted to look it 23 up. 24 Q. Got it. 25 F. Balestrieri?</p>
<p style="text-align: right;">Page 79</p> <p>1 I can't tell you the number of hours. 2 Q. Got it. Got it. 3 So to -- to look, I'm looking at the 4 first -- or rather, the second page, page 2, and 5 there I think the people that you've referenced are 6 listed as professionals with their titles and their 7 hours and rates. 8 A. Right. 9 Q. Do you see that? 10 A. I do. 11 MR. STOY: Object to the form. 12 BY MR. MIGLIACCIO: 13 Q. Can you tell me, you know, Mortimer, 14 R. Mortimer, what background that person has in 15 terms of degrees or qualifications? 16 A. Richard Mortimer. I believe he has a 17 Ph.D. in economics from Berkeley. He's a principal, 18 which means a partner. I don't know the difference 19 between a managing principal and a principal, but I 20 think, broadly speaking, they're -- they're like 21 partners at -- at AG. 22 Q. Fink. S. Fink? 23 A. Stephen Fink is another partner. He was 24 involved -- I -- now I remember he was involved in 25 early discussions in the case but not very much</p>	<p style="text-align: right;">Page 81</p> <p>1 A. F. Balestrieri was not on most of the 2 call -- I don't remember that person being on calls. 3 Q. J. Bernard? 4 A. I don't remember that person being on 5 calls. 6 Q. And you don't know Balestrieri or Bernard, 7 their -- their qualifications? 8 A. No. 9 Q. J. Lu? 10 A. Jessica Lu. 11 Q. Yeah. 12 A. Was on almost all the calls. She has an 13 MBA from MIT. And she's a manager. 14 Q. S. Livingston? 15 A. I don't know who that person is. 16 Q. M. Frean? 17 A. Right. Molly Frean. She has a Ph.D. from 18 University of Pennsylvania. 19 Q. And did you work with her a lot on this? 20 A. I would say less than Jessica and 21 Michaela, Brian, and -- she was less present than 22 those four but she was present on a few of the 23 calls. 24 Q. A. Khan? 25 A. I don't remember working with that person.</p>

<p style="text-align: right;">Page 82</p> <p>1 Q. And N. Mwonga?</p> <p>2 A. I don't remember working with that person</p> <p>3 either.</p> <p>4 Q. T. Radtke?</p> <p>5 A. I don't remember working with that person.</p> <p>6 Q. Okay.</p> <p>7 I. Tibrewal?</p> <p>8 A. And I don't remember working with that</p> <p>9 person.</p> <p>10 Q. Got it.</p> <p>11 Were there any other people that you</p> <p>12 remember working with other than that -- that are --</p> <p>13 that are listed here?</p> <p>14 A. No.</p> <p>15 Q. Okay. Did you review this bill before it</p> <p>16 was submitted?</p> <p>17 A. I submitted my hours, but I don't review</p> <p>18 the hours of -- submitted by Analysis Group.</p> <p>19 Q. Got it. All right.</p> <p>20 I want to ask you some questions about the</p> <p>21 scope of your opinions here in this case.</p> <p>22 Were you -- or are you offering any</p> <p>23 opinions on epidemiology or general causation?</p> <p>24 A. What do you mean by "general causation"?</p> <p>25 Q. Are you offering an opinion whether the</p>	<p style="text-align: right;">Page 84</p> <p>1 to my opinion.</p> <p>2 BY MR. MIGLIACCIO:</p> <p>3 Q. And you're not offering that opinion</p> <p>4 specifically?</p> <p>5 A. No.</p> <p>6 Q. Okay. Fair to say you did not do anything</p> <p>7 to review the epidemiology in this case or</p> <p>8 investigate general causation?</p> <p>9 MR. STOY: Object to the form to the</p> <p>10 extent it misstates his testimony.</p> <p>11 Go ahead.</p> <p>12 THE WITNESS: I would say that I did</p> <p>13 not -- it's not a core opinion of mine to comment on</p> <p>14 general causation. Epidemiology is relevant in</p> <p>15 other ways, broadly speaking.</p> <p>16 When you consider epidemiology as the</p> <p>17 prevalence of other diseases or the characteristics</p> <p>18 of people that take valsartan versus the people that</p> <p>19 don't take valsartan, there are other elements of</p> <p>20 epidemiology that are important for my opinion.</p> <p>21 BY MR. MIGLIACCIO:</p> <p>22 Q. Let me -- let me give you more specific</p> <p>23 question.</p> <p>24 You didn't look at the question of -- you</p> <p>25 didn't look at epidemiology with respect to the</p>
<p style="text-align: right;">Page 83</p> <p>1 contaminated valsartan at issue in this case, it can</p> <p>2 cause cancer?</p> <p>3 A. I'm not rendering any opinions on whether</p> <p>4 valsartan with nitrosamine impurities can cause</p> <p>5 cancer.</p> <p>6 Q. Got it.</p> <p>7 I want to direct you to paragraph 44 of</p> <p>8 your -- of your report.</p> <p>9 A. Okay.</p> <p>10 Q. And what -- you state -- and -- "While</p> <p>11 NDMA and NDEA exposure may be perceived as a</p> <p>12 potential general cancer risk, it has not been</p> <p>13 demonstrated as a risk with respect to any specific</p> <p>14 type of cancer, nor has the presence of nitrosamines</p> <p>15 in certain valsartan products been shown to present</p> <p>16 a general or specific cancer risk."</p> <p>17 Are you offering that opinion or are -- is</p> <p>18 that -- or is that an assumption that you are</p> <p>19 stating?</p> <p>20 MR. STOY: Object to the form.</p> <p>21 You can answer.</p> <p>22 THE WITNESS: That's not a core opinion</p> <p>23 that I'm offering. That is something that I am</p> <p>24 citing -- it's my understanding that I'm citing from</p> <p>25 some literature that I reviewed but it's not central</p>	<p style="text-align: right;">Page 85</p> <p>1 question of whether the contaminated valsartan can</p> <p>2 cause cancer in this case?</p> <p>3 MR. STOY: Object to the form.</p> <p>4 THE WITNESS: In my report, there are some</p> <p>5 sources that I reviewed about what other agencies</p> <p>6 have said about the link between nitrosamines and</p> <p>7 the potential for cancer. But my core opinions do</p> <p>8 not concern that.</p> <p>9 BY MR. MIGLIACCIO:</p> <p>10 Q. Okay. Did you review any dietary studies</p> <p>11 that discussed increased risk of cancer at higher</p> <p>12 levels of NDMA ingestion?</p> <p>13 A. Yes.</p> <p>14 Q. You did?</p> <p>15 A. Strike that.</p> <p>16 I reviewed studies on the concentration of</p> <p>17 NDMA and NDEA in various dietary sources.</p> <p>18 I also reviewed sources that had</p> <p>19 estimates, for example, from the FDA on the</p> <p>20 potential risk of cancer given nitrosamines.</p> <p>21 Q. But you're not offering any opinions with</p> <p>22 respect to those studies?</p> <p>23 A. No.</p> <p>24 Q. Okay. When you say this isn't a core</p> <p>25 opinion that you're offering, does that mean this is</p>

<p style="text-align: right;">Page 86</p> <p>1 not an opinion that you would be testifying to at 2 trial if there was a trial in this case? 3 MR. STOY: Object to the form. 4 THE WITNESS: I wouldn't be testifying on 5 issues of general causation. 6 BY MR. MIGLIACCIO: 7 Q. Got it. 8 I want to direct you to paragraph 68 of 9 your complaint -- of your -- I'm sorry, your -- your 10 report where you discuss the M-E-P-S data. 11 A. The MEPS data. 12 Q. Right. 13 Can you tell me what MEPS data is? 14 A. Sure. I think that paragraph actually 15 does a pretty good job of doing that. 16 MEPS is a data source that's collected by 17 survey. It is a -- supposed to be a representative 18 survey of the U.S. population and it collects data 19 on healthcare utilization, healthcare -- health 20 insurance coverage. It also has information on 21 patient diseases and demographics. And it conducts 22 these surveys yearly. Doesn't necessarily follow 23 the same people all the time, but it conducts a 24 representative survey over time on -- on -- on this 25 type of information.</p>	<p style="text-align: right;">Page 88</p> <p>1 who took affected valsartan" -- and when we're 2 talking about affected valsartan we're talking about 3 the valsartan at issue in this case, right, that has 4 the nitrosamine contamination in it, right? 5 A. To be clear, affected valsartan is -- 6 we -- we would have to define it by an NDC code. 7 Q. Uh-huh. 8 A. We don't know anything more than that. We 9 don't know what the lot was that the patient took 10 the valsartan from. As would be the case for many 11 of the patients in the proposed class. But we know 12 the NDC number which means we know the manufacturer 13 of the valsartan. And that's what -- 14 Q. So that's what you're -- that's what 15 you're talking about when you're talking about 16 affected valsartan? 17 A. Right. So the valsartan may or may not 18 have actually contained nitrosamines but it was from 19 a manufacturer as specified by the NDC code. 20 Q. And you say 38 -- just to -- to continue 21 that sentence, "who took affected valsartan 22 (34.8 percent for diabetes, 20.2 percent for cancer) 23 was similar to the rate of individuals who took 24 non-affected valsartan (38.2 percent for diabetes 25 and 19.1 percent for cancer)."</p>
<p style="text-align: right;">Page 87</p> <p>1 Q. Who -- and who -- what organization 2 sponsors this or -- or, you know, collects the data? 3 A. I believe it's the federal government. 4 Q. Okay. And you directed that this data be 5 pulled for -- for patients who took affected 6 valsartan and non-affected valsartan? 7 A. As well as patients who don't take -- 8 Q. Valsartan at all. 9 A. We wanted to compare that. 10 I believe there are three -- three sets of 11 patients: patients who didn't take valsartan at 12 all, patients who took affected valsartan, patients 13 who took non-affected valsartan. 14 Q. Was -- how big is this sample, you know, 15 what -- what percentage would you say it -- it 16 captured of the population? 17 A. I can't -- I don't know exactly right now 18 but I know it's a representative sample and it's -- 19 the survey design is -- is meant to, you know, 20 survey enough people so that it -- you know, 21 inferences can be made with reasonable certainty on 22 a representative sample of the U.S. 23 Q. And I'm just looking at paragraph 68. 24 You state, "I found that the rate of 25 cancer and diabetes in the MEPS data for individuals</p>	<p style="text-align: right;">Page 89</p> <p>1 A. Correct. 2 Q. Could we agree that 20.2 percent is 3 greater than 19.1 percent? 4 A. It depends on the -- the -- the number -- 5 the number 20.2 and the number 19.1 in complete 6 isolation, if you were just to ask me which number 7 is greater, I would say 20.2. 8 But if you are doing a study on this you 9 would have to ask what the statistical significance 10 is between 20.2 and 19.1. You would also have to 11 ask whether this is clinically significant given -- 12 you know, this is not -- we're not using this as a 13 study of causation at all. 14 You know, you would have to -- you would 15 have to control for a number of different things in 16 order to kind of ask whether there's a clinically 17 and statistically meaningful relationship between 18 affected valsartan and cancer. This is simply 19 descriptive. 20 Q. You haven't done any of those things, 21 statistical study or clinical study on that, right? 22 A. On -- on causation? 23 Q. Yeah. With respect to this paragraph. 24 A. Correct. The goal of this is not to ask 25 whether valsartan could cause cancer -- affected</p>

<p style="text-align: right;">Page 90</p> <p>1 valsartan could cause cancer.</p> <p>2 Q. Got it.</p> <p>3 Do you have any experience -- we talked, I</p> <p>4 think at some length, about your -- you know, your</p> <p>5 work as a hospitalist, as -- as a physician.</p> <p>6 You know, do you have any experience</p> <p>7 setting up a medical monitoring program?</p> <p>8 A. No.</p> <p>9 MR. STOY: Object to the form.</p> <p>10 You can answer.</p> <p>11 THE WITNESS: Okay.</p> <p>12 No. By "medical monitoring" -- do you</p> <p>13 want to be a little bit more specific, actually,</p> <p>14 before I say --</p> <p>15 BY MR. MIGLIACCIO:</p> <p>16 Q. Yeah.</p> <p>17 Well, what experience do you have</p> <p>18 monitoring at-risk patient populations? I'll put it</p> <p>19 that way.</p> <p>20 A. Patients at risk for -- for what?</p> <p>21 Q. For cancer.</p> <p>22 A. As a hospitalist, I don't have -- it's not</p> <p>23 part of my job as a hospitalist to monitor at-risk</p> <p>24 patient populations for diseases that have not yet</p> <p>25 become known.</p>	<p style="text-align: right;">Page 92</p> <p>1 Q. They haven't specifically focused on that?</p> <p>2 A. They have not specifically focused on the</p> <p>3 process of making cancer diagnoses.</p> <p>4 Q. What -- what -- and it sounds like it's a</p> <p>5 pretty broad or general interest of yours. Can you</p> <p>6 explain a little bit more about, you know, are you</p> <p>7 writing it -- that as an economist? Like, what is</p> <p>8 the -- like, can you give me some more meat on the</p> <p>9 bone for that?</p> <p>10 MR. STOY: Object to the form.</p> <p>11 THE WITNESS: I'm writing about this as</p> <p>12 both a clinician and an economist. The -- I've</p> <p>13 written economics papers on the process of making</p> <p>14 diagnoses and how to understand kind of, you know,</p> <p>15 various tradeoffs between overdiagnosis versus</p> <p>16 underdiagnosis as well as the accuracy of the</p> <p>17 diagnosis process.</p> <p>18 Some -- some providers may make both more</p> <p>19 Type I errors and Type II errors, and it's not a</p> <p>20 tradeoff between those providers and other</p> <p>21 providers.</p> <p>22 So this economics literature is focused on</p> <p>23 systems of care, provider behavior, and kind of</p> <p>24 specific objects of diagnostic errors such as Type I</p> <p>25 errors and Type II errors.</p>
<p style="text-align: right;">Page 91</p> <p>1 Q. Got it.</p> <p>2 Have you -- have you done anything to</p> <p>3 monitor at-risk patient populations for diseases</p> <p>4 that have not become known? Have you done that in</p> <p>5 any other part of your work other than a</p> <p>6 hospitalist, like, you know, as -- in -- in academia</p> <p>7 or -- or elsewhere?</p> <p>8 MR. STOY: Object to the form.</p> <p>9 THE WITNESS: In academia, part of my</p> <p>10 research agenda is on the process of making</p> <p>11 diagnoses and part of that involves studying the</p> <p>12 properties of diagnostic tests and the -- the kind</p> <p>13 of human behavior that goes into the process of</p> <p>14 making diagnosis. So that would be related to this</p> <p>15 idea of screening for diagnoses, identifying</p> <p>16 diagnoses. That -- that's -- I think that's all I</p> <p>17 can say.</p> <p>18 I've studied it from an academic</p> <p>19 perspective that's interested in the process of</p> <p>20 making diagnoses.</p> <p>21 BY MR. MIGLIACCIO:</p> <p>22 Q. The process of making diagnoses, have they</p> <p>23 related to cancers?</p> <p>24 A. They could certainly be applied to the</p> <p>25 process of diagnosing cancers.</p>	<p style="text-align: right;">Page 93</p> <p>1 I have applied this type of research for a</p> <p>2 clinical audience as well. I'm working on an</p> <p>3 opinion piece in JAMA for a clinical audience that</p> <p>4 talks about diagnostic efficiency, what makes for</p> <p>5 diagnostic errors, and how can we improve the</p> <p>6 quality of diagnoses.</p> <p>7 BY MR. MIGLIACCIO:</p> <p>8 Q. These -- this research, is it fair to say,</p> <p>9 has not focused on specific patient subpopulations</p> <p>10 who are at risk for cancer?</p> <p>11 A. It has not specifically focused on that,</p> <p>12 so -- population. It has kind of viewed the process</p> <p>13 of diagnoses more broadly.</p> <p>14 But, you know, the diagnosis of cancer is</p> <p>15 one of the major -- one of the -- one of the most</p> <p>16 important kind of domains of diagnostic</p> <p>17 decision-making. I would say cancer is -- is quite</p> <p>18 important in terms of diagnostic error,</p> <p>19 misdiagnoses, and how we can improve our process of</p> <p>20 making diagnoses.</p> <p>21 Q. Do you have -- I think -- now -- I think I</p> <p>22 asked this one way. I'll ask it another way.</p> <p>23 Do you have any experience administering a</p> <p>24 medical monitoring program --</p> <p>25 A. No.</p>

<p style="text-align: right;">Page 94</p> <p>1 Q. -- to monitor a group?</p> <p>2 Before you offered your opinion here in</p> <p>3 this case, have you had any litigation experience</p> <p>4 with opining relating to -- offering an opinion with</p> <p>5 respect to medical monitoring?</p> <p>6 A. With respect to medical monitoring for</p> <p>7 patients at risk for cancer?</p> <p>8 Q. Yes.</p> <p>9 A. No.</p> <p>10 Q. Okay. Any other aside from that narrow</p> <p>11 group, anything broader?</p> <p>12 A. Some of my other opinions relate to</p> <p>13 physician behavior. And physician behavior -- an</p> <p>14 important part of physician behavior is deciding</p> <p>15 whether a certain treatment is appropriate for a</p> <p>16 patient or deciding whether a certain test is</p> <p>17 appropriate for a certain patient. And that relates</p> <p>18 to diagnoses, making diagnoses.</p> <p>19 Q. Okay. Do you know of any medical</p> <p>20 monitoring programs that have been, you know,</p> <p>21 approved by courts?</p> <p>22 MR. STOY: Object to the form.</p> <p>23 THE WITNESS: I haven't researched which</p> <p>24 medical monitoring programs have been approved by</p> <p>25 courts.</p>	<p style="text-align: right;">Page 96</p> <p>1 A. No.</p> <p>2 Q. Okay. I want to direct you to</p> <p>3 paragraph 32 in your report.</p> <p>4 A. Okay.</p> <p>5 Q. Okay. And I'm -- I'm going down toward</p> <p>6 the -- I guess it's the one -- second -- the third</p> <p>7 sentence where -- that begins, "In contrast."</p> <p>8 And it says, "In contrast the screening</p> <p>9 guidelines I discuss in this section refer to the</p> <p>10 testing of an apparently healthy, asymptomatic</p> <p>11 target population."</p> <p>12 A. Right.</p> <p>13 Q. Would you agree that the screening</p> <p>14 guidelines that you have discussed in this report</p> <p>15 are for the average risk population?</p> <p>16 A. I am not sure about that. The</p> <p>17 guidelines -- some of these guidelines are for</p> <p>18 smokers, for example. I don't know what you mean by</p> <p>19 "average risk population."</p> <p>20 I -- here, I say patients without</p> <p>21 symptoms.</p> <p>22 Q. Aside from smokers -- smokers have a</p> <p>23 special set of guidelines, right?</p> <p>24 A. Right.</p> <p>25 Q. I think you discussed them. And maybe you</p>
<p style="text-align: right;">Page 95</p> <p>1 BY MR. MIGLIACCIO:</p> <p>2 Q. Got it.</p> <p>3 Have you looked or researched into -- of</p> <p>4 any medical monitoring programs in the United States</p> <p>5 that are not approved by courts? And I'm talking</p> <p>6 about programs outside of the guidelines that you</p> <p>7 reference in your report.</p> <p>8 MR. STOY: Object to form.</p> <p>9 THE WITNESS: Can you state that again,</p> <p>10 please?</p> <p>11 BY MR. MIGLIACCIO:</p> <p>12 Q. Yeah.</p> <p>13 Have you looked at or researched any</p> <p>14 medical monitoring programs in the United States</p> <p>15 that -- that aren't court-approved, you know, like</p> <p>16 there's the 9/11 medical monitoring program, is that</p> <p>17 something you've looked at, ever?</p> <p>18 MR. STOY: Object as to form.</p> <p>19 THE WITNESS: I can't recall whether I've</p> <p>20 looked at that or not, whether I've looked at the</p> <p>21 9/11 program.</p> <p>22 BY MR. MIGLIACCIO:</p> <p>23 Q. For -- that -- that was just an example.</p> <p>24 I mean, you know, there may be others.</p> <p>25 But you can't recall any others?</p>	<p style="text-align: right;">Page 97</p> <p>1 might have discussed one other. But smokers have --</p> <p>2 they get low-dose CT scans.</p> <p>3 What is the guideline for smokers again?</p> <p>4 A. I believe that's in my report in</p> <p>5 Figure number 1.</p> <p>6 Q. Figure 1. Okay.</p> <p>7 A. Yeah. Would you like to turn to that?</p> <p>8 Q. Sure.</p> <p>9 A. Okay. So for lung cancer, the USPSTF has</p> <p>10 a recommendation of "B" for adults aged 50 to 80</p> <p>11 with a 20 pack-year smoking history who currently</p> <p>12 smoke or quits within the last 15 years.</p> <p>13 Q. And you reference the USPSTF; is that</p> <p>14 right?</p> <p>15 A. Yes. Uh-huh.</p> <p>16 Q. Who -- what organization is the USPSTF?</p> <p>17 A. The USPSTF is the U.S. Preventive Services</p> <p>18 Task Force, and that is the main organization that</p> <p>19 comes up with guidelines related to preventive</p> <p>20 services.</p> <p>21 My boss is a member of this task force.</p> <p>22 It's a -- it's -- it's a high profile task force</p> <p>23 that considers evidence on various -- various</p> <p>24 population-based guidelines -- I'm sorry, various</p> <p>25 population-based interventions that you could do</p>

<p style="text-align: right;">Page 98</p> <p>1 or -- or -- or screening tests. And it issues 2 recommendations based on this evidence. 3 Q. Have you ever been a member of the USPS -- 4 USPSTF? 5 A. No. 6 Q. Okay. The NCI, you referenced the 7 National Cancer Institute. What -- what does the 8 NCI do? 9 A. The National Cancer Institute is an 10 organization that is an authority on cancer, 11 various -- and in this -- and in this setting, the 12 NCI -- I refer to the NCI if it has any guidelines 13 with respect to screening of cancer. 14 Q. Are you familiar with the National 15 Comprehensive Cancer Network, or NCCN? 16 A. I've heard of that organization. 17 Q. Do -- what do you know about the NCCN? 18 A. I know that that organization also puts 19 out quality measures on cancer care. I'm not sure I 20 know very much more about the NCCN. 21 Q. Is it fair to say that the development and 22 treatment -- the development and establishment of 23 treatment guidelines for cancer has not been a focus 24 area of your research; is that fair to say? 25 MR. STOY: Object to the form.</p>	<p style="text-align: right;">Page 100</p> <p>1 A. Yeah. Let's turn to the CV. 2 Q. Okay. 3 A. This is in -- under working paper number 2 4 on page A-2. 5 Q. A-2? 6 A. Yeah. 7 Q. Okay. 8 "Fixing Misallocation with Guidelines"? 9 A. Correct. 10 Q. "Awareness versus Adherence"? 11 A. Correct. 12 Q. Got it. 13 NBER, National Bureau of Economic 14 Research? 15 A. Exactly. 16 Q. And you have an appointment or -- with 17 that group right now? 18 A. I do. I have an affiliation with that 19 group. 20 Q. Okay. You've had that for a long time? 21 A. I've had -- well, it's something that you 22 need to be nominated and I guess approved for by 23 the -- this is something that I got in my first year 24 as a faculty. It's called -- it's in my CV under 25 "Faculty Research Fellow, National Bureau of</p>
<p style="text-align: right;">Page 99</p> <p>1 THE WITNESS: Could you say that again? 2 BY MR. MIGLIACCIO: 3 Q. That is it fair to say that the 4 development and establishment of treatment 5 guidelines for cancer has not been a focus of your 6 research? 7 A. The -- 8 MR. STOY: Object to the form. 9 THE WITNESS: The development and -- of 10 cancer -- the development of cancer guidelines has 11 not been a focus of my research. I have focused on 12 other types of guidelines in my research. 13 BY MR. MIGLIACCIO: 14 Q. What other types of guidelines have you 15 focused on? 16 A. Specifically, I focused on guidelines for 17 the treatment of atrial fibrillation, which in -- 18 you know, which are similar in ways that you are 19 developing guidelines based on evidence. There are 20 risks and benefits for recommending a certain course 21 of action for a broad set of patients. And in this 22 particular research, I'm interested in how providers 23 respond to guidelines. 24 Q. So could you -- could you direct me to any 25 papers you have on that subject?</p>	<p style="text-align: right;">Page 101</p> <p>1 Economic Research." 2 Q. Got it. Got it. Got it. Okay. 3 And this working paper was published in 4 July of last year? 5 A. That was the most recent version of the 6 paper, correct. 7 Q. Oh. Has -- it's changed over time? Have 8 there been -- 9 A. Yeah, you can see previous versions of the 10 paper if you go to that website. 11 Q. Got it. Got it. 12 And have they all -- have they all related 13 to atrial fibrillation or have they -- those papers 14 changed their focus? 15 A. The -- the empirical focus of the paper 16 has been on atrial fibrillation throughout. The 17 paper of course is motivated much more broadly. 18 It's motivated about how do we form guidelines, how 19 do physicians respond to guidelines; if you're 20 trying to optimize outcomes for a patient 21 population, how should you best make use of 22 guidelines. 23 Q. Your coauthors, there are -- it looks like 24 one, two, three -- four other authors? 25 A. Right.</p>

Page 102

1 Q. Have they been the same authors on -- on
 2 this series of papers over time or has it -- has it
 3 changed?
 4 A. I believe it's been the same for -- ever
 5 since we've had a working paper, it's been the same.
 6 Q. Are they physicians or economists or both?
 7 A. Both.
 8 Q. All right. So all four are
 9 physician/economists?
 10 A. Oh, sorry. Two of them are -- three --
 11 two of them economists. Leila Agha and Jason
 12 Abaluck are economists. Daniel Singer is a
 13 physician. And Diana Zhu is a Ph.D. student in
 14 economics.
 15 Q. Got it.
 16 Have you contributed in any way to the
 17 development of a USP -- P -- USPSTF guideline
 18 relating to cancer?
 19 A. No.
 20 Q. Have you contributed to the evidence-based
 21 reviews provided by the NCI as referenced in your
 22 report, I think paragraph 35?
 23 A. Paragraph 35.
 24 Q. I mean, I'm not saying that you did. I'm
 25 just asking. That -- that's my -- I think you --

Page 103

1 you discuss the evidence-based review that NCN
 2 does -- NCI does?
 3 A. Uh-huh.
 4 No, I have not.
 5 Q. Okay. Do you consider yourself to be an
 6 expert in the formulation of the derivation of the
 7 original clinical guidelines in the screening for
 8 cancers?
 9 A. The formulation or derivation?
 10 Q. Uh-huh.
 11 A. Could you clarify that?
 12 Q. Or the creation --
 13 A. Okay. Do I --
 14 Q. -- of the clinical guidelines?
 15 A. Okay. Sorry, could you restate the
 16 question?
 17 Q. Yeah.
 18 A. Do I consider myself an expert in?
 19 Q. In the creation of clinical guidelines for
 20 the screening of cancers?
 21 A. No.
 22 MR. STOY: Object to the form.
 23 Go ahead.
 24 BY MR. MIGLIACCIO:
 25 Q. Can we agree that it can take a long time

Page 104

1 to get screening procedures added to national
 2 guidelines at USPSTF?
 3 MR. STOY: Object to the form.
 4 THE WITNESS: I don't know what I would
 5 characterize as a long time. I think it's --
 6 there's a reason why we don't -- we require a
 7 certain level of evidence in order to change a
 8 guideline. Because evidence is incremental and
 9 because evidence can change we want to have a
 10 certain level of certainty whenever we have a type
 11 of guideline.
 12 And as I discuss in my report, when the
 13 guidelines are for screening, we have to be very
 14 cognizant of the potential risks of screening. And
 15 that's why I think we would have just a higher bar
 16 to -- to, you know, recommending a guideline for
 17 a -- a new guideline for screening.
 18 BY MR. MIGLIACCIO:
 19 Q. And for -- for example, you know, can we
 20 agree that it took many years before low-dose CT
 21 scans were added as a guideline for tobacco users?
 22 MR. STOY: Object to form.
 23 THE WITNESS: I don't know the particular
 24 history of that. Are you specifically referring to
 25 low-dose CT scans as opposed to chest x-rays?

Page 105

1 BY MR. MIGLIACCIO:
 2 Q. Uh-huh.
 3 A. I would need to look into the history of
 4 when low-dose CT scans were available. And, you
 5 know, there is a certain -- as I discuss in my
 6 report, one of the considerations of using a certain
 7 technology for screening is characterizing the
 8 performance of that technology in terms of false
 9 positives and false negatives as well as
 10 characterizing any risk that may come from using
 11 this new technology of a CT scan versus a chest
 12 x-ray. I would imagine even if it's low dose, there
 13 would be much more radiation than the chest x-ray.
 14 Q. Can you -- there'd be more radiation from
 15 a low-dose CT scan than a chest x-ray?
 16 A. Than a chest x-ray. I would imagine that
 17 a CT scan -- a usual CT scan has I think orders of
 18 magnitude, more radiation than a single plain film
 19 chest x-ray, and even if it's a low-dose CT scan I
 20 would have to -- I would have to look at -- review
 21 the evidence, but I think there would still be some
 22 concern of higher radiation from a low-dose CT scan
 23 than a chest x-ray.
 24 Q. But you're not offering that opinion here
 25 and now? You don't know the answer to that without

<p style="text-align: right;">Page 106</p> <p>1 reviewing the information?</p> <p>2 A. Correct. I don't know in that specific</p> <p>3 case. But I would -- and what -- but what is</p> <p>4 central to my opinions is that all of these</p> <p>5 screening tests have potential risks both in terms</p> <p>6 of false positives and false negatives so that's why</p> <p>7 you need to understand the testing characteristics</p> <p>8 for a certain screening procedure but also some of</p> <p>9 these screening procedures have physical risks such</p> <p>10 as radiation.</p> <p>11 Q. I will be going through more of your</p> <p>12 report. I think you -- so to -- I think you have --</p> <p>13 you have stated in your report that certain</p> <p>14 thresholds need to be met.</p> <p>15 And I think that's what you're saying now</p> <p>16 before a screening guideline is made; fair to say?</p> <p>17 A. Correct.</p> <p>18 Q. And I'll direct you to some portions of</p> <p>19 your report on that in -- in a moment.</p> <p>20 MR. STOY: Nick, before we --</p> <p>21 MR. MIGLIACCIO: Yeah.</p> <p>22 MR. STOY: If you're about to jump to</p> <p>23 another topic, we've been going a little over an</p> <p>24 hour now.</p> <p>25 MR. MIGLIACCIO: Yes.</p>	<p style="text-align: right;">Page 108</p> <p>1 of asymptomatic patients."</p> <p>2 And then you say below, "In my opinion,</p> <p>3 the evidence related to NDMA and NDEA in affected</p> <p>4 valsartan fails to meet the bar required to use a</p> <p>5 uniform screening process on a broad population of</p> <p>6 asymptomatic patients."</p> <p>7 Do you have a -- what do you mean by "a</p> <p>8 high threshold must be met for a risk factor to be</p> <p>9 incorporated into a guideline to screen</p> <p>10 populations"?</p> <p>11 A. I believe there's another part of my</p> <p>12 report that kind of elaborates on this threshold.</p> <p>13 Q. Okay.</p> <p>14 A. Right. So I think paragraph 35 gets at</p> <p>15 this here. Here I talk about the USPSTF guidelines.</p> <p>16 But I think it's -- it's broadly applicable to the</p> <p>17 general framework we would need to consider a</p> <p>18 threshold.</p> <p>19 Would you like me to read the relevant</p> <p>20 sentence?</p> <p>21 Q. Sure.</p> <p>22 A. "USPSTF recommendations are based on a</p> <p>23 framework which considers questions such as whether</p> <p>24 screening may reduce morbidity; whether sufficiently</p> <p>25 sensitive and specific screening tests are</p>
<p style="text-align: right;">Page 107</p> <p>1 MR. STOY: Would this be a good time for a</p> <p>2 quick break?</p> <p>3 MR. MIGLIACCIO: Yeah, I think so. Why</p> <p>4 don't we go on off the record and we can discuss how</p> <p>5 long.</p> <p>6 MR. STOY: Okay.</p> <p>7 THE VIDEOGRAPHER: Off the record at</p> <p>8 10:19 a.m. Pacific time.</p> <p>9 (Whereupon, a brief recess was taken.)</p> <p>10 THE VIDEOGRAPHER: We are back on the</p> <p>11 record. The time is 10:44 a.m. Pacific time.</p> <p>12 BY MR. MIGLIACCIO:</p> <p>13 Q. Okay. Great. All right.</p> <p>14 Dr. Chan, I think we were talking before</p> <p>15 the break about thresholds and I want to ask you</p> <p>16 some questions about that.</p> <p>17 I direct you to paragraph 16 of your</p> <p>18 report.</p> <p>19 A. Okay.</p> <p>20 Q. Okay. And I want to direct you to midway</p> <p>21 through it, there's a sentence that says, "While</p> <p>22 there are many risk factors for the nine types of</p> <p>23 cancers identified by Plaintiffs in this case, a</p> <p>24 high threshold must be met for a risk factor to be</p> <p>25 incorporated into a guideline to screen populations</p>	<p style="text-align: right;">Page 109</p> <p>1 available; whether early detection and treatment</p> <p>2 makes a difference in morbidity; and what the</p> <p>3 potential harms of screening and subsequent</p> <p>4 screening-implied treatment may be."</p> <p>5 So this sentence does not specifically</p> <p>6 mention the agent in question, such as NDMA and</p> <p>7 NDEA, but the agent in question and the potential</p> <p>8 cancer type related to this agent bears on many of</p> <p>9 these factors in this sentence such as whether a</p> <p>10 screening may reduce morbidity.</p> <p>11 The agent needs to be sufficiently</p> <p>12 associated with cancer in the sense that we expect</p> <p>13 sufficiently high number of patients associated with</p> <p>14 this agent or this risk factor, for screening to</p> <p>15 reduce morbidity.</p> <p>16 Q. And you're -- but you are not offering, as</p> <p>17 we discussed, a general causation opinion here,</p> <p>18 you're not offering an opinion on -- on what you've</p> <p>19 just said?</p> <p>20 A. I'm not --</p> <p>21 MR. STOY: Object to the form.</p> <p>22 Sorry, Doctor.</p> <p>23 THE WITNESS: It's not my assignment to</p> <p>24 offer an opinion on causation, but as I mentioned</p> <p>25 earlier, I refer to sources that have some estimate</p>

<p style="text-align: right;">Page 110</p> <p>1 of the associated -- a potential associated cancer 2 risk. 3 So, for example, in paragraph 88 of the 4 report, I cite a very conservative estimate, meaning 5 like a worst -- somewhat of a worst-case scenario 6 that the FDA has estimated that the highest dose of 7 valsartan, one additional cancer case may be 8 expected per 8,000 patients exposed to NDMA 9 containing valsartan. And one additional cancer 10 case maybe expected per 18,000 patients exposed to 11 NDEA containing valsartan. 12 Q. Yes. And I -- yeah, I do -- I do see 13 that. 14 "The maximum exposure to NDMA from 15 affected valsartan is approximate" -- "of 29,498 16 micrograms is approximately 12 times the lifetime 17 acceptable intake, implying an excess cancer risk of 18 12 in 100,000 or approximately 1 in 8,000," right, 19 of paragraph 92? 20 A. Yes. I was reading paragraph 88 but part 21 of 92 also mentions. 22 Q. I'm sorry, I think I said paragraph 93, 23 but I may have that wrong, I may have said -- 24 given -- yeah, I was referring to paragraph 93. 25 A. Okay. Yep, I see that you're reading</p>	<p style="text-align: right;">Page 112</p> <p>1 my saying that the R or the threshold is quite high. 2 If you look at the risk factors that make 3 it into a screening guideline, as I read, there are 4 a number of different criteria that need to be met 5 and one of those criteria include a high risk of 6 cancer. 7 BY MR. MIGLIACCIO: 8 Q. And is your opinion, is that 1 in 8,000 is 9 not a high risk of cancer? 10 A. I think compared to some of the other 11 risks that I mention in my report it's much lower. 12 Q. Where do you draw the line as a high risk 13 or low risk, what is the -- what is the numerical 14 threshold? Do you have one? 15 A. I'm not sure if I can say precisely where 16 it is, but I can say that 1 in 8,000 is an order or 17 two of magnitude lower than some of the other risks 18 that we have and many of these other risks don't 19 make it into broad population guidelines. 20 Q. What other risks that we have are you 21 referring to? 22 A. Yeah, it's in my report. If I can refer 23 to that. 24 For example, radiation, I think is one 25 thing that I do mention in my report.</p>
<p style="text-align: right;">Page 111</p> <p>1 paragraph 93. 2 Q. Yeah. 3 A. And I was reading from 88. 4 Q. Is this 1 in 8,000 risk an acceptable 5 cancer risk to you as a physician? 6 MR. STOY: Object to the form. 7 THE WITNESS: I'm not sure what you mean. 8 MR. STOY: I'm sorry. I just want to add 9 an objection to the extent it's outside the scope 10 of -- of Dr. Chan's report. 11 Go ahead. I'm sorry. 12 THE WITNESS: Right. I'm not sure what 13 you mean by "acceptable cancer risk," and I'm 14 commenting on this not as a physician per se, but in 15 my analysis of what organizations like the USPSTF 16 and NCI have -- what types of risk factors have made 17 it into a guideline. 18 So if you look at Figure 1 and Figure 2 of 19 my report, particularly Figure 2, there are a number 20 of different risk factors that are associated with 21 all of these nine cancers. And in my report, I talk 22 about the magnitude of some of these risk factors. 23 Some of these risk factors are quite -- 24 much higher than the 1 in 8,000 for NDMA and 1 in -- 25 did I say 18,000 for NDEA. And that is the basis of</p>	<p style="text-align: right;">Page 113</p> <p>1 Yes, so I believe this is in figure -- 2 this is in Figure 2 and paragraph 42 of my report. 3 The risk for lung cancer including one 4 first degree family member affects -- so family 5 history, you know, you have, like, a relative risk 6 of 2.59 -- 57. You have radiation therapy at 7 relative risk of two. 8 And if you convert these to number of 9 people you would need to screen to get one cancer, 10 they would be much higher than the number that I 11 just cited for NDMA and NDEA. 12 The relative risk for lung cancer of 8 13 of -- of a 20- to 30-pack history of smoking is 8 -- 14 8.2. So that's substantially even higher than the 15 other relative risk that I just cited. 16 And if you convert these to number of 17 people you would need to screen to find one patient 18 with a -- who truly has the cancer they would be 19 much, much -- much lower than you would need for 20 NDMA and NDEA. 21 Q. What is the type of -- of screening that's 22 done for lung cancer? 23 A. I believe that's in my report. That 24 should be in Figure 3. 25 So in Figure 3, there are a number of</p>

<p style="text-align: right;">Page 114</p> <p>1 different potential options and the one that is 2 recommended is low-dose CT scan currently. 3 Q. And as you testified earlier, that may 4 have a higher radiation dosage than a regular x-ray? 5 A. Higher, correct. 6 Q. Higher. Got it. 7 So that there is, in your opinion, a 8 certain degree of risk that is associated with a 9 low-dose CT scan? 10 A. Right. 11 Q. Got it. 12 I see in paragraph 42, you cite to 13 epidemiology studies in footnotes 59 and 60. 14 A. Uh-huh. 15 Q. But you have not done so with respect to 16 NDMA, you have not looked at the -- right, at least 17 I don't see the citations for the -- for 18 epidemiology studies and relative risk associated 19 with NDMA. Or if I am missing something you can 20 point it to me. 21 MR. STOY: Object to the form. Object to 22 the extent it mischaracterizes the report. 23 Go ahead. 24 THE WITNESS: The report does cite the FDA 25 calculation for the number of additional cases of</p>	<p style="text-align: right;">Page 116</p> <p>1 the most conservative in the sense that they are 2 considering the highest dose of NDMA and NDEA and 3 over a long period of time. 4 Q. And you haven't looked at this, though, to 5 offer that opinion, you're -- this is like ancillary 6 to -- to your opinion? 7 A. This is -- 8 MR. STOY: Object -- hang on, Doctor. 9 Object to the form of the question to the 10 extent it mischaracterizes. 11 Go ahead. 12 THE WITNESS: I would characterize this as 13 this is an input into my opinion in the sense that 14 I've looked at a range of sources that have various 15 linkages between NDMA and affected valsartan to 16 cancer. Some of which are no linkage. 17 And if I take the most conservative 18 estimate, meaning the highest risk, and compare that 19 to some of the other risks that I list in 20 paragraph 42 and Figure 2, that linkage between NDMA 21 and NDEA and kind of more importantly the linkage 22 between affected valsartan and cancer is low. 23 BY MR. MIGLIACCIO: 24 Q. And, you know, to be clear, you have not 25 looked at any of the other plaintiffs' expert</p>
<p style="text-align: right;">Page 115</p> <p>1 cancer potentially in -- you know, with the highest 2 dose of NDMA and NDEA. And that I think can be 3 converted to a relative risk. I'm not sure if in 4 the report we've done that, but it could be -- it 5 could certainly be converted to a relative risk. 6 BY MR. MIGLIACCIO: 7 Q. Fair to say, though, the sole basis for 8 your opinion, then, on the -- I'll -- what I'll say 9 is your view that there's a low relative risk, and 10 you can tell me if I'm wrong about that, is the FDA 11 citation that you give here; is that fair? 12 A. I don't think it's the sole basis. There 13 are other sources that I do cite that are even -- 14 that have a lower to potential -- other sources 15 don't demonstrate a risk of cancer in humans to -- 16 you know, based on on NDMA or NDEA, and I believe 17 I've cited one of those sources. 18 So I think there's a range of potential 19 linkages between NDMA and NDEA to cancer, in 20 particular, valsartan -- affected valsartan to 21 cancer. As I said earlier, causation is not, you 22 know, my -- my main area of focus here. 23 But the magnitude of any potential linkage 24 is relevant to my opinions and that's where I 25 believe the FDA estimate of the linkage is perhaps</p>	<p style="text-align: right;">Page 117</p> <p>1 reports other than the ones we have discussed 2 already today? 3 A. Correct. 4 Q. So the threshold that you're identifying, 5 I see that you cite to paragraph 40 in -- you cite 6 in paragraph 35 to a study or an article in 7 footnote 47. 8 Do you see that? By Vearrier and 9 Greenberg? 10 A. Correct. 11 Q. That -- that's the sole citation you have 12 for that -- that sentence that you read to me 13 earlier about what USPSTF recommendations are based 14 on, right? 15 A. That is the only citation in that 16 footnote, but I don't think it's -- it's not really 17 the only source that I have for that statement. In 18 fact, that might be a -- you know, this -- this 19 citation is about the implementation of medical 20 monitoring programs following potentially hazardous 21 exposures, a medical-legal perspective, this seems 22 like it's a comment -- it's a perspective in a 23 framework on how we should think about medical 24 monitoring programs. 25 But there -- if you read all of the USPSTF</p>

<p style="text-align: right;">Page 118</p> <p>1 recommendations, which are in separate cites, I 2 don't kind of list them as cites for that particular 3 sentence, but they could very well be related. If 4 you read any of those USPSTF recommendations, they 5 do walk you through a way of thinking about this 6 framework. 7 Q. So fair to say there is -- you don't 8 have -- or you're not offering a numerical 9 threshold -- or you're not offering an opinion that 10 there is a numerical threshold, but you just, you 11 know, add as to whether a monitoring program would 12 be appropriate? 13 A. I think based on the sentence that I read 14 in paragraph 35, this is a multidimensional 15 consideration. It can -- it depends on a number of 16 different considerations and therefore, if it 17 depends on all of these things, it shouldn't -- one 18 threshold, it wouldn't be a single scale or 19 threshold based on the risk of cancer. 20 That's one important consideration, but 21 there are other considerations that I just read from 22 that sentence. 23 Q. Uh-huh. So when you talk about threshold, 24 you say "a high threshold," you know, I think you 25 used that terminology maybe once, twice, three times</p>	<p style="text-align: right;">Page 120</p> <p>1 Does that mean a group of people who are 2 not at increased risk, excluding of course the 3 smokers that we've talked about? 4 A. No. I think by definition, any population 5 that you're going to specify screening for has to be 6 at increased risk. What I mean by asymptomatic 7 means that they don't have symptoms. 8 So if you are talking about lung cancer, 9 they don't have a cough that you want to kind of 10 evaluate further. If you're talking about colon 11 cancer they don't have abdominal pain. They don't 12 have symptoms, but they could be at increased risk. 13 Q. What are the increased risks that are -- 14 that are found in the broad asymptomatic population? 15 A. I believe that's in Figure 2. 16 Q. Okay. 17 A. Figure 2, I list the number of different 18 risk factors for each type of cancer in the last 19 column, Figure 2. 20 Q. Colorectal. And we've discussed this 21 already, colorectal and lung, there are these 22 additional screening guidelines for people at 23 increased risk, right? 24 A. There are guidelines to screen certain 25 populations based on age in the setting of</p>
<p style="text-align: right;">Page 119</p> <p>1 in the report. That's -- what you're referring to 2 is this paragraph? 3 A. What I -- yeah, when I say "threshold" I 4 don't mean a single number that is -- maps to the 5 risk of cancer. What I mean is a decision-making 6 threshold that considers a number of different 7 factors and a lot of these factors are 8 individualized for a clinician to reach a 9 decision-making threshold for a given patient. 10 And there's a separate threshold that you 11 might make for a guideline to screen a population of 12 asymptomatic patients and this would also similarly 13 consider a number of different factors here that I 14 just read. 15 Q. And that's -- that second threshold is the 16 one that I -- I was talking about. 17 A. Right. 18 Q. And that's what I think you're referring 19 to in your report for -- for the guidelines? 20 A. Correct. 21 Q. Going back to paragraph, I think 32, and I 22 think I asked you about the -- the types of -- the 23 screening guidelines that you have cited elsewhere 24 in your report and -- and you've referred to a broad 25 population of asymptomatic patients.</p>	<p style="text-align: right;">Page 121</p> <p>1 colorectal cancer, and based on age and smoking 2 history in the setting of lung cancer. 3 Q. Got it. 4 Those are used to define populations for 5 an asymptomatic testing but -- and in -- correct? 6 A. I'm sorry? 7 Q. I said those are used to define the 8 populations for asymptomatic testing? 9 A. Those are used to -- correct. Correct. 10 Q. Would you agree that blood tests and stool 11 tests proposed by Dr. Kaplan are not highly 12 invasive? 13 MR. STOY: Object to the form. 14 Go ahead. 15 THE WITNESS: Do you want to define 16 "invasive"? 17 BY MR. MIGLIACCIO: 18 Q. Yeah, I mean, I think you talk about the 19 risks that certain test -- tests may -- may have for 20 people. And I think you said physical risks 21 earlier? 22 A. Right. 23 Q. I think you talk about risks. Do blood 24 tests or stool tests present physical risks to 25 patients?</p>

<p style="text-align: right;">Page 122</p> <p>1 A. They don't -- you're right that they don't 2 present physical risks. The physical risks would be 3 quite minor. But they are not great tests. And if 4 you look at Figure 3, you'll see that there's really 5 not a recommendation to use many blood tests in most 6 cases. 7 And even for stool tests, you know, a lot 8 of people have colonoscopies rather than fecal -- 9 what are called blood -- you know, basically stool 10 tests for colon cancer. 11 So what I also talk about in my report is 12 not just the risk of a physical harm from the 13 screening procedure, it is the risk of getting a 14 false positive and false negative. 15 And if you use tests with lower 16 sensitivity or specificity to screen in a population 17 that is not at particularly high risk for the 18 cancer, you're at risk for getting false positives 19 and false negatives, and that can harm the patient. 20 There are ways in which that can set the patient 21 down a path that would be harmful. 22 Q. You talk about scrutiny-dependant cancers. 23 I think in paragraph 53. 24 A. Uh-huh. 25 Q. And I think you reference four cancers:</p>	<p style="text-align: right;">Page 124</p> <p>1 to treat the cancer has not necessarily gotten 2 better. And the underlying nature of the cancer 3 when it is, you know, newly detectable may not imply 4 anything toward quality of life or for life 5 expectancy. 6 So the definition of scrutiny-dependent 7 could change over time depending on the technology 8 to screen and the technology to treat. 9 Q. Got it. 10 Do you have any evidence, though, or any 11 opinion right now that any of those seven cancers I 12 just detailed are scrutiny-dependent? 13 A. I haven't thought hard enough -- haven't 14 thought about it long enough at this point. I could 15 return to that at some later point but at this 16 moment of the deposition, I can't offer an opinion 17 on that. 18 Q. Got it. 19 Is there any way for a physician to know 20 that a certain cancer when caught very early, let's 21 say prostate cancer, I'm just giving an example -- 22 A. Uh-huh. 23 Q. -- you know if it's caught very early, if 24 it is going to be aggressive or if it is not going 25 to be aggressive?</p>
<p style="text-align: right;">Page 123</p> <p>1 prostate, breast, thyroid, and lung. 2 Do you see that? 3 A. Yes. 4 Q. Do you understand that there are nine 5 cancers that Dr. Kaplan has offered an opinion about 6 in this case? 7 A. Yes. 8 Q. Okay. Are you offering the opinion that 9 the following cancers are what you'd call 10 scrutiny-dependent: liver, stomach, colorectal, 11 intestinal, esophageal, bladder, pancreatic, and 12 blood? 13 A. These -- what I cite as scrutiny-dependent 14 cancers in this paragraph are examples. I haven't 15 ruled out the possibility that other cancers could 16 also be scrutiny-dependent. 17 Whether a cancer is scrutiny-dependant or 18 not depends on the technology that we have. It may 19 not be scrutiny-dependant now but it could be 20 scrutiny-dependent later. It depends on the -- of 21 course the nature of the cancer, but also the nature 22 of treatment that we have available for that cancer. 23 So what makes it scrutiny-dependent is 24 that our technology to detect the cancer, if we look 25 hard enough, has gotten better. But our technology</p>	<p style="text-align: right;">Page 125</p> <p>1 A. I think there are ways to have an educated 2 guess. Not being an oncologist myself so I don't 3 consider myself an expert on prostate cancer, but 4 I'm -- know more about prostate cancer than the 5 average person. 6 There are ways where you could consider 7 epidemiology, what happens to the average patient 8 that you diagnose with prostate cancer with a given 9 PSA test, for example. And is there variation when 10 you have a given PSA test. That kind of -- and 11 reflects on the quality of the PSA test, which we 12 know to be not great. When you have patients who 13 can have the same PSA test but have -- you know, a 14 test could be neither sensitive nor specific if like 15 the test -- knowing the test doesn't give you that 16 much information. 17 So, again, you can know the general 18 epidemiology of what happens for a patient with 19 these given characteristics and their diagnosis with 20 prostate cancer. You could also ask what happens 21 when you have additional clinical information such 22 as the PSA test and what that means for the 23 possibilities of whether that cancer is going to be 24 aggressive or not. 25 Q. But I think you said it would be an</p>

<p style="text-align: right;">Page 126</p> <p>1 educated guess, really, there's not a way to know 2 whether? 3 A. We -- we -- 4 Q. -- it's aggressive or not? 5 A. It's -- it's kind of a spectrum. We 6 wouldn't know in general with certainty. But we 7 would have an educated guess and sometimes we would 8 know more and sometimes we would know less. 9 Q. Uh-huh. So from the time, let's say, a 10 prostate cancer is -- it's diagnosed, right, by a -- 11 by a biopsy, right? Am I wrong about that? 12 A. You know more -- you know the most about 13 it, yes, after you've actually taken tissue out and 14 you've kind of looked at that tissue with -- with 15 pathology. 16 Q. Right. That's -- is that when the 17 prostate cancer diagnosis is made or is it made 18 based on PSA levels? 19 A. It would require tissue to diagnose 20 prostate cancer. 21 Q. So if you do -- if you take a tissue 22 pathology of prostate cancer, can you know with the 23 result of that pathology report whether it's an 24 aggressive cancer or not? 25 A. It would give you more information. I --</p>	<p style="text-align: right;">Page 128</p> <p>1 your -- I mean, have you studied tissue biopsies of 2 cancers or is this something that you're -- kind of 3 have more general expertise in? 4 A. This is something as a hospitalist I'm 5 familiar with how patient care, the process of 6 patient care involves tissue biopsy in order to 7 prognosticate and in order to make treatment 8 decisions and in order to diagnose. 9 Q. Got it. 10 It's not something that you do as -- on 11 a -- on a regular basis? 12 A. I don't -- if you could clarify what you 13 mean by what I do, so I don't -- I'm not a 14 pathologist. I'm a hospitalist. 15 As a hospitalist you do kind of make plans 16 to get a biopsy and do -- use the results of the 17 biopsy for decisions. You often do this in concert 18 with other experts such as oncologists. So I -- I'm 19 familiar with how they're used with the caveats that 20 I just told you. 21 Q. Got it. 22 I think, you know, I've asked you and 23 you've told me now several times about, you know, 24 general causation or lack thereof with respect to 25 your opinion.</p>
<p style="text-align: right;">Page 127</p> <p>1 again, that would depend on the characteristics of 2 the pathology test. And the pathology test is 3 probably the best you can know up until that point 4 without kind of foresight into the future. 5 But I would have to review the 6 characteristics of the pathology test and the 7 epidemiology associated with different histologies 8 that you might find on the pathology test. 9 Q. So fair to say that without foresight in 10 the future you're not going to know the answer, I 11 mean, and nobody has a crystal ball with that 12 foresight to know if -- if that particular tissue 13 biopsy represents an aggressive or less aggressive 14 form of prostate cancer? 15 A. I think it's fair to say we don't know 16 with a hundred percent certainty. But I -- I would 17 have to review the evidence to tell you how much 18 uncertainty there is with a tissue biopsy. 19 Q. How much uncertainty as to? 20 A. The aggressiveness of the cancer or the 21 life expectancy -- 22 Q. Got it. 23 A. -- of the patient. 24 Q. Got it. Got it. 25 Is that something that you have done in</p>	<p style="text-align: right;">Page 129</p> <p>1 I want to ask you about the -- the -- the 2 threshold that the plaintiffs have placed in their 3 class definition. 4 Have you -- have you reviewed that 5 threshold, lifetime cumulative threshold that's in 6 the third amended complaint? 7 MR. STOY: Object to the form. 8 THE WITNESS: Have I reviewed the 9 threshold, is your question? 10 BY MR. MIGLIACCIO: 11 Q. Yes. Yep. 12 A. I'm familiar with the statement of some 13 threshold in the acronym lifetime -- LCT, lifetime 14 cumulative threshold. 15 Q. Got it. 16 Are you offering any opinions with respect 17 to that threshold? 18 MR. STOY: Object to the form. 19 BY MR. MIGLIACCIO: 20 Q. Or LCT? 21 A. I'm offering opinions on whether that 22 threshold is feasible to assess. 23 Q. In what -- in what way? 24 A. In the sense that in my report I describe 25 a number of different sources of cancer, a number of</p>

<p style="text-align: right;">Page 130</p> <p>1 different sources of nitrosamines, not just affected 2 valsartan, but potentially other drugs and other 3 dietary sources, and endogenous production of 4 nitrosamines. 5 And in my report an opinion of mine is 6 that it would be difficult to assess whether 7 somebody has passed the lifetime cumulative 8 threshold. Aside from the question of whether the 9 lifetime cumulative threshold is actually a valid 10 concept. 11 Q. Do you understand that the lifetime 12 cumulative threshold set forth by the plaintiffs 13 defines a risk or exposure floor? 14 MR. STOY: Object to the form to the 15 extent it assumes facts not on the record. 16 Go ahead. 17 THE WITNESS: Frank, I can barely hear 18 you. 19 MR. STOY: I'm sorry. 20 I made an objection to form to the extent 21 it assumes facts not on the record. I'll speak up. 22 THE WITNESS: Okay. 23 And, Nick, can I hear you ask the question 24 again? 25</p>	<p style="text-align: right;">Page 132</p> <p>1 we haven't answered that yet, then I'm not sure how 2 we even know a lower bound on the -- on the causal 3 effect of nitrosamines on cancer. 4 BY MR. MIGLIACCIO: 5 Q. I -- I was asking you to assume that. But 6 that -- that's -- I'm asking you to make that 7 assumption. 8 A. Okay. Sure. 9 Q. Yeah. 10 Then do you understand that it would set 11 a -- a floor, an -- a floor, a risk floor? 12 MR. STOY: Same objections. 13 THE WITNESS: Well, under the assumption 14 that we have a lower bound, then by construction it 15 does set a floor. 16 BY MR. MIGLIACCIO: 17 Q. Got it. 18 How -- I want to ask you some questions 19 about pricing, which I -- I think you detailed 20 elsewhere in -- in your report. I think you use an 21 example of Massachusetts General as one of the 22 hospitals. I think Dr. Song might be associated 23 with Massachusetts General. 24 A. We all love MGH. 25 Q. Yeah. Yeah, yeah.</p>
<p style="text-align: right;">Page 131</p> <p>1 BY MR. MIGLIACCIO: 2 Q. Yes. 3 I mean, do you understand that the 4 lifetime cumulative threshold set forth by the 5 plaintiffs defines a risk or exposure floor, that 6 it's a floor? 7 A. I'm not sure I understand that because, 8 again, I'm not an expert on causation. But if it's 9 possible that nitrosamines don't cause cancer, then 10 I'm not sure how it would set a floor unless if the 11 floor includes zero. 12 Q. Got it. 13 And if it's possible, let's just say 14 for -- hypothetically, for your purposes, I guess, 15 that nitrosamines do cause cancer and that the -- 16 the threshold and the system, the scoring system set 17 forth by the plaintiffs details how much nitrosamine 18 is in a particular dosage, would -- then would you 19 understand that -- that it would set a floor? 20 MR. STOY: Objection. Incomplete 21 hypothetical. 22 Go ahead. 23 THE WITNESS: I'm not sure how that would 24 be done. If -- first you -- as you say, you would 25 need to say that nitrosamines do cause cancer. If</p>	<p style="text-align: right;">Page 133</p> <p>1 Do you know Dr. Song? 2 A. I -- I do. 3 Q. You do. Yeah. 4 A. Yeah. 5 Q. Yeah, I can't imagine there are that many 6 MD-Ph.D. experts out there in the world. Probably a 7 very small number, I guess. 8 A. Yeah. I think less than 20 probably. 9 Q. Wow, wow, wow. 10 So my question about MGH, I mean, is it 11 fair to say that MGH has a -- has a lot of market 12 power? 13 MR. STOY: Object to the form. 14 THE WITNESS: I'm not sure exactly how I 15 would characterize it, but I know that MGH has been 16 involved in litigation regarding its market power. 17 BY MR. MIGLIACCIO: 18 Q. Okay. Did you have any involvement in 19 that? 20 A. No. 21 Q. Let me -- I mean, I think we've taken a 22 break. I'm not -- I do want to go back to one of 23 the -- you know, I want to about explore a little 24 bit more this question of -- of your -- your 25 testimony in the -- in the -- in the opioid</p>

<p style="text-align: right;">Page 134</p> <p>1 litigation.</p> <p>2 You know, Frank can obviously object if --</p> <p>3 as -- as necessary, but I did want to see if you</p> <p>4 could testify more about, you know, the subject</p> <p>5 about -- you know, the subject matter in a general</p> <p>6 matter.</p> <p>7 A. More about what? Sorry?</p> <p>8 Q. The subject matter of that litigation in</p> <p>9 a -- in a general matter, if you could give us that</p> <p>10 in -- in a general matter without divulging any</p> <p>11 confidential information?</p> <p>12 MR. STOY: I -- I think the challenge</p> <p>13 there, Nick, is with a question that broad he might</p> <p>14 not be comfortable answering it because he's not</p> <p>15 sure where those lines are, right.</p> <p>16 MR. MIGLIACCIO: Uh-huh.</p> <p>17 MR. STOY: A more specific question he</p> <p>18 might be able to give you a specific answer.</p> <p>19 MR. MIGLIACCIO: Well, how -- let me try</p> <p>20 to -- I'll try to narrow it down a little bit.</p> <p>21 Q. Can you tell us how the testimony in those</p> <p>22 cases is similar to the testimony you're offering</p> <p>23 here?</p> <p>24 A. Sort of -- like thematically, is that --</p> <p>25 is that your question?</p>	<p style="text-align: right;">Page 136</p> <p>1 transcripts exist.</p> <p>2 THE WITNESS: Oh.</p> <p>3 BY MR. MIGLIACCIO:</p> <p>4 Q. That's what I'm asking.</p> <p>5 A. Yeah. Yeah, transcripts exist.</p> <p>6 Q. They do exist, okay.</p> <p>7 And do you know, are they -- do you know</p> <p>8 if they are marked confidential or not in their</p> <p>9 entirety?</p> <p>10 A. I don't know.</p> <p>11 Q. Okay. Got it.</p> <p>12 Is that litigation currently ongoing? Can</p> <p>13 you answer that question?</p> <p>14 A. I am not sure. I think so.</p> <p>15 Q. Okay. I'm not -- I don't want to ask you</p> <p>16 anything about it. Just if it -- okay. Okay.</p> <p>17 So going back to -- to this question on,</p> <p>18 you know, Massachusetts General's market power or --</p> <p>19 or -- you know, is it fair to say that the prices in</p> <p>20 one area of the country can, you know, differ in --</p> <p>21 for instance, Massachusetts General may have high</p> <p>22 prices, but if you go to rural western Massachusetts</p> <p>23 the prices would be lower, of medical care, medical</p> <p>24 services?</p> <p>25 A. It's fair to say that prices differ a lot</p>
<p style="text-align: right;">Page 135</p> <p>1 Q. Thematically or subject matter. You know,</p> <p>2 is the subject matter similar. Both of those</p> <p>3 questions, thematically and subject matter.</p> <p>4 MR. STOY: Dr. Chan, if you can ask -- if</p> <p>5 you can answer that question from a high level, I</p> <p>6 think it's okay. So that would be my instruction to</p> <p>7 you.</p> <p>8 THE WITNESS: From a high level, I am</p> <p>9 relying on my expertise as an economist, as a</p> <p>10 clinician, and as somebody who is familiar with</p> <p>11 health policy.</p> <p>12 BY MR. MIGLIACCIO:</p> <p>13 Q. Do -- can -- did those other cases, do</p> <p>14 they involve class action claims?</p> <p>15 A. No.</p> <p>16 Q. There are transcripts of those</p> <p>17 depositions, is that right, the ones that you</p> <p>18 took -- that you gave?</p> <p>19 THE WITNESS: Sorry. Go -- go ahead,</p> <p>20 Frank.</p> <p>21 MR. STOY: No, you can answer that. Go</p> <p>22 ahead.</p> <p>23 THE WITNESS: I don't know if the</p> <p>24 transcripts are public, in the public domain.</p> <p>25 MR. STOY: He just asked you if</p>	<p style="text-align: right;">Page 137</p> <p>1 across different hospitals and different payors. I</p> <p>2 am not sure if your prediction is true where</p> <p>3 Massachusetts General would necessarily have higher</p> <p>4 prices than western Massachusetts.</p> <p>5 And I think part of the analyses that I</p> <p>6 lay out is not just to show the average price of</p> <p>7 Massachusetts General Hospital but that even within</p> <p>8 the same hospital, there is wide variation across</p> <p>9 different payors.</p> <p>10 Q. Uh-huh. And you know about that wide</p> <p>11 variation, right? I mean, you -- you have data that</p> <p>12 demonstrates it?</p> <p>13 A. Correct.</p> <p>14 Q. So is it fair to say that that variation</p> <p>15 is knowable?</p> <p>16 MR. STOY: Object to the form.</p> <p>17 THE WITNESS: Some of the variation's</p> <p>18 knowable. With respect to this class, it's likely</p> <p>19 that we might not know as researchers or as, you</p> <p>20 know, using publicly available data, what the</p> <p>21 relevant price would be for the members of the</p> <p>22 class.</p> <p>23 BY MR. MIGLIACCIO:</p> <p>24 Q. You're talking about the proposed class</p> <p>25 here in this case?</p>

<p style="text-align: right;">Page 138</p> <p>1 A. Correct.</p> <p>2 Q. And you know -- I mean, you know, you</p> <p>3 understand that this class has not been finally</p> <p>4 certified yet, right?</p> <p>5 A. Correct.</p> <p>6 Q. So there -- it's not -- you know,</p> <p>7 there's -- there is not yet a defined class and the</p> <p>8 definition could potentially be different than the</p> <p>9 way it is presently, correct?</p> <p>10 A. Correct.</p> <p>11 The reason I answered the question that</p> <p>12 way is because what we know about Massachusetts</p> <p>13 General Hospital -- first of all, this is a recent</p> <p>14 development within the year that we required</p> <p>15 hospitals to be more transparent about their prices.</p> <p>16 There is still uncertainty about whether there's</p> <p>17 full transparency about the prices and furthermore,</p> <p>18 we only know prices in the hospital setting. We</p> <p>19 don't know prices in the outpatient setting. So</p> <p>20 there is still big gaps in what we know.</p> <p>21 Q. Tell me about this recent development that</p> <p>22 just happened with respect to -- that you just</p> <p>23 referenced.</p> <p>24 A. I believe that in the last year or so the</p> <p>25 government mandated hospitals to be more transparent</p>	<p style="text-align: right;">Page 140</p> <p>1 certain services but out of network for other</p> <p>2 services because the hospital might employ different</p> <p>3 people and they might not know what prices they're</p> <p>4 going to get.</p> <p>5 So I think surprise billing is</p> <p>6 specifically about the question about whether</p> <p>7 they're in -- whether they're in network or out of</p> <p>8 network, and there could be huge differences in</p> <p>9 prices faced that are unexpected by patients as a</p> <p>10 result of that.</p> <p>11 Q. Got it. Got it.</p> <p>12 So you think that the government --</p> <p>13 that -- that the government has started with</p> <p>14 hospitals as -- as -- as a first priority, but it</p> <p>15 may not have moved to outpatient procedures yet?</p> <p>16 A. It has not. It has not moved to</p> <p>17 outpatient procedures.</p> <p>18 Q. It has not.</p> <p>19 And do you know when of if it will move to</p> <p>20 outpatient procedures?</p> <p>21 A. I don't. It's -- I was -- we, you know, I</p> <p>22 don't think most people saw that the Trump</p> <p>23 Administration would make price transparency a</p> <p>24 priority and now we might have other priorities and</p> <p>25 it's unclear.</p>
<p style="text-align: right;">Page 139</p> <p>1 with their prices and the reason it did that was</p> <p>2 because it was well known that there was a lot of</p> <p>3 intransparency in what prices would be if a patient</p> <p>4 kind of walked into the emergency department at</p> <p>5 Massachusetts General and got a procedure, there</p> <p>6 could be tenfold, maybe even a hundredfold</p> <p>7 difference in kind of prices depending on where they</p> <p>8 went and what provider -- what insurer they had.</p> <p>9 There was just huge amount of</p> <p>10 intransparency and uncertainty from patients'</p> <p>11 perspectives. The government decided to make that a</p> <p>12 priority and it started with hospitals, for</p> <p>13 hospitals to make prices more transparent.</p> <p>14 Q. This was legislation, right, like federal</p> <p>15 legislation?</p> <p>16 A. I don't know if it's legislation or an</p> <p>17 executive order.</p> <p>18 Q. Okay. And are you talking about -- I</p> <p>19 mean, I've heard of something called surprise</p> <p>20 billing. Is that related to -- to what you're</p> <p>21 talking about now?</p> <p>22 A. It's potentially -- it's related. It's</p> <p>23 not exactly the same. Surprise billing is another</p> <p>24 whole level of complexity where somebody can go to</p> <p>25 the hospital and they could be in network for</p>	<p style="text-align: right;">Page 141</p> <p>1 They've been intransparent for decades.</p> <p>2 They suddenly became transparent in this one kind of</p> <p>3 sector of the healthcare industry. Who knows what's</p> <p>4 going to happen in the future.</p> <p>5 Q. When did this happen, like when did the --</p> <p>6 just January 1 of this year?</p> <p>7 A. Within the year, within 2020 -- or</p> <p>8 actually, 2021. I'm not -- I would have to review</p> <p>9 the dates of this.</p> <p>10 Q. Sure.</p> <p>11 And -- and you think it was an executive</p> <p>12 order that did it?</p> <p>13 A. It -- it could have been an executive</p> <p>14 order.</p> <p>15 Q. Okay.</p> <p>16 A. I'm not sure.</p> <p>17 Q. Got it.</p> <p>18 Yeah, I -- I won't hold you to it. We</p> <p>19 could look at it and figure it out exactly if</p> <p>20 necessary.</p> <p>21 A. Yes.</p> <p>22 Q. How does that change or -- your analysis</p> <p>23 in your report or does it because since this sector</p> <p>24 now has great -- great transparency?</p> <p>25 MR. STOY: Object to the form.</p>

<p style="text-align: right;">Page 142</p> <p>1 THE WITNESS: I -- I don't know if I'd 2 characterize it as great transparency. Again, 3 it's -- it's a part of the healthcare -- it's a -- 4 it's a sub -- subset of providers that work in 5 hospitals that are now required to disclose prices 6 with various insurers. We don't know whether this 7 information is accurate yet. It's only been out 8 there for a little while.</p> <p>9 There is a vast majority -- there's a lot 10 of other places that patients get care, most of the 11 time in outpatient settings, that we still don't 12 know what those prices are.</p> <p>13 BY MR. MIGLIACCIO: 14 Q. Are you doing any research into this, like 15 is this part of your academic research?</p> <p>16 A. This is not -- it's not currently a part 17 of my research agenda. It's certainly within my 18 scope of expertise, and I could become interested in 19 it at some later point.</p> <p>20 Q. Yeah. Has -- have the -- has the first 21 dataset become available?</p> <p>22 A. They are available on the -- on -- I 23 believe they're -- they're required to make the 24 datasets available. If you look at, for example, 25 figure -- where I have like the prices at</p>	<p style="text-align: right;">Page 144</p> <p>1 done by a hospital. So it's, for example, a clinic 2 that is associated with MGH.</p> <p>3 Q. Okay. So -- so I'm in Washington, D.C. 4 And I'm just going to, you know, give you a -- like 5 kind of an example of how it is here.</p> <p>6 MedStar is a big hospital system in the 7 Washington, D.C. area.</p> <p>8 A. Uh-huh.</p> <p>9 Q. And if you go to a physician -- as an 10 outpatient, there are many physicians now, it seems 11 to me, that are like the MedStar, you know, office 12 of a certain specialty, but they're an outpatient 13 clinic.</p> <p>14 Does Massachusetts General have outpatient 15 clinics that do things like urinalysis, 16 colonoscopies, et cetera?</p> <p>17 A. Yes.</p> <p>18 Q. Okay. And they're like branded as 19 Massachusetts General, you know, GI specialists? 20 I'm giving a hypothetical, fictional example, but is 21 that a realistic sort of thing?</p> <p>22 A. That -- that possibility does -- does 23 exist where --</p> <p>24 Q. Okay.</p> <p>25 A. -- there's a clinic that is I believe</p>
<p style="text-align: right;">Page 143</p> <p>1 Massachusetts General --</p> <p>2 Q. Uh-huh.</p> <p>3 A. -- there is a note that tells you where to 4 download those data.</p> <p>5 Q. Uh-huh.</p> <p>6 A. So Figure 8 is where you would look for 7 MGH. And I would imagine that other hospitals have 8 other sites where you could download their data.</p> <p>9 Q. Got it.</p> <p>10 So you got this from that -- from that 11 database?</p> <p>12 A. Correct.</p> <p>13 Q. That's where this came from. Got it.</p> <p>14 And had it relates to -- and so the --</p> <p>15 the -- the CPT HCPS -- HP -- HCPCS code --</p> <p>16 A. You can call it -- you can call it 17 "hick-picks."</p> <p>18 Q. "Hick-picks"? Did I say that right?</p> <p>19 A. Yes.</p> <p>20 Q. "Hick-picks." Got it. Okay. Thanks.</p> <p>21 Those codes, so these would be procedures 22 that were done inpatient; is that right?</p> <p>23 A. These are procedures --</p> <p>24 Q. Oh, outpatient. Outpatient. Sorry.</p> <p>25 A. Right. They're outpatient but they're</p>	<p style="text-align: right;">Page 145</p> <p>1 owned by MGH and submits claims under the 2 Massachusetts General Hospital tax ID, there are 3 examples of that.</p> <p>4 Q. Okay. And so the pricing of all these 5 clinics -- or of that particular hypothetical, 6 fictional, potentially, you know, fictional clinic, 7 would be transparent now in this matter?</p> <p>8 MR. STOY: Object to the form to the 9 extent it misstates his prior testimony. Objection. 10 Incomplete hypothetical.</p> <p>11 THE WITNESS: You want to restate your 12 question? You had a lot of fictional, hypothetical 13 in there.</p> <p>14 BY MR. MIGLIACCIO: 15 Q. Sure.</p> <p>16 I mean, so let's say there's an MGH 17 outpatient clinic that does colonoscopies. The 18 prices of those colonoscopies are now going to be 19 known?</p> <p>20 MR. STOY: Object to the form. Same 21 objection.</p> <p>22 THE WITNESS: It's unclear whether we 23 actually do know the prices.</p> <p>24 I also want to say that we -- I'm not sure 25 if we know all of the -- you know, it's -- it's</p>

Page 146

1 helpful to circle back to this class, and I believe
 2 the class are the patients here.
 3 So we would be interested in what the
 4 patients would pay, not necessarily the price that
 5 the provider is getting. I don't know if we know
 6 all of the details of the insurance contract. I
 7 know that this price transparency, it could be
 8 limited to just the price that the provider is
 9 getting between the provider and the insurance
 10 company.
 11 It does not give you information on cost
 12 sharing in this insurance contract between the
 13 patient and the -- and -- and the insurer. And as I
 14 just mentioned, we don't know the quality of this
 15 data yet. These data yet.
 16 BY MR. MIGLIACCIO:
 17 Q. But you've used it in your report, at
 18 least in Figure 8?
 19 A. Yes. Because we can see that even if the
 20 quality was off, even if we didn't have the price
 21 exactly right, it does show quite a bit of
 22 variation. And that variation is illustrative.
 23 There's other sources of research out there even
 24 before this price transparency.
 25 This, you know, within the last year that

Page 147

1 has demonstrated large variation in prices within
 2 insurer, within provider, kind of looking at the
 3 intersection between providers and insurers. It's
 4 a -- it's a -- it's a research finding as of five,
 5 six years ago that there is huge variation in price
 6 across different private insurers and private -- and
 7 providers.
 8 Q. How -- do you know if there has been any
 9 research done to determine whether the price --
 10 pricing data is -- is inaccurate?
 11 MR. STOY: Object to the form.
 12 THE WITNESS: This is something that
 13 people are currently looking at. I think it's still
 14 pretty new for us to know.
 15 BY MR. MIGLIACCIO:
 16 Q. It's required by federal law, right, and
 17 this is not something that's being done voluntary, I
 18 imagine?
 19 A. That's right. This new -- at least what I
 20 just -- by it, what I just discussed about hospitals
 21 publishing data on prices for various procedures and
 22 various payors.
 23 Q. I'm looking at footnote 207 of your
 24 report. Can you --
 25 A. Okay.

Page 148

1 Q. It's on page 69.
 2 A. Uh-huh.
 3 Q. Is that the announcement of this --
 4 this -- this new transparency requirement?
 5 A. Possibly. Although this is a little bit
 6 earlier than I thought it would be.
 7 Q. Okay. Yeah, that's why I was asking
 8 because I don't know.
 9 A. It's possible.
 10 Q. All right. Got it. Okay. I mean --
 11 yeah.
 12 Do you -- with respect to -- to the --
 13 this issue that you just raised of pricing the --
 14 the split between what the patient pays and what the
 15 insurer pays, do you understand that Dr. Song's
 16 report focuses on estimating total price, not just
 17 the patient's share of the price?
 18 A. That was a little confusing to me, as I
 19 understood the complaint to be the -- to be the cost
 20 that the patient would bear, not total price. But I
 21 did notice that in Dr. Song's report he didn't delve
 22 into issues of cost sharing.
 23 Q. So would -- would -- would it change your
 24 opinion now if you understood that he is only
 25 focusing on estimating the total price and not just

Page 149

1 the payment -- patient share of the price?
 2 A. I understand what he's doing, but my
 3 understanding of the class is that we are interested
 4 in what patients would bear. So I was a bit
 5 confused. It seemed to me that that was an omission
 6 in the analysis that he did.
 7 Q. Is it fair to say that the total price is
 8 the more appropriate measure for the burden borne by
 9 society for -- for testing?
 10 MR. STOY: Object to the form.
 11 THE WITNESS: I think that would be a much
 12 more complicated question. The burden borne by
 13 society. I don't think that total price is a good
 14 measure of that either because that includes profits
 15 by hospitals and like charges versus what they
 16 actually get after negotiations. There is just a
 17 lot of additional complexity there. I think burden
 18 borne to society would have to be better defined.
 19 BY MR. MIGLIACCIO:
 20 Q. All right. I'll give you some -- just
 21 some -- I'll set this up with some hypothetical
 22 questions for you.
 23 Let's say there is a person at risk of
 24 developing cancer, you know, as a result of a
 25 medication contaminated with a carcinogen, right.

Page 150

1 Let -- let's assume all those things are -- are
 2 true. There's somebody who took a -- you know,
 3 ingested a carcinogen and they are at a risk -- a
 4 higher risk of developing cancer.
 5 Can -- do you follow that?
 6 A. Yes.
 7 Q. Okay. Who in society should bear the
 8 burden for screening that person for cancer risks?
 9 MR. STOY: Objection. Incomplete
 10 hypothetical. Objection to the extent it calls for
 11 a legal conclusion.
 12 You can go ahead.
 13 THE WITNESS: Your question is who -- if
 14 there is a pill that somebody ingested that puts
 15 them at higher risk for cancer, who should be
 16 responsible for bearing that burden?
 17 I don't think that's within the scope of
 18 my report. I don't know if that's within my
 19 expertise to say who should be responsible for that.
 20 BY MR. MIGLIACCIO:
 21 Q. As a healthcare economist, what -- does
 22 your research focus or include expertise on who
 23 should pay what in -- in the healthcare system?
 24 MR. STOY: Object to the form.
 25 THE WITNESS: No. By "should," do you

Page 151

1 mean some normative sense of who bears
 2 responsibility, who should -- as an economist, I
 3 think that would take a lot of careful thinking. We
 4 might have the tools to consider that but I wouldn't
 5 have the tools to think about it right off the bat
 6 on this call.
 7 We often -- it depends on contracts. It
 8 depends on the legal system. We use -- we are quite
 9 familiar with contracts and who does pay the burden
 10 and we might compare different contracting
 11 arrangements and compare which one is better in
 12 terms of welfare for society. But those would be
 13 complicated analyses that would take deeper thought.
 14 BY MR. MIGLIACCIO:
 15 Q. In the current regime we have in this
 16 country for healthcare -- for healthcare generally,
 17 who pays for healthcare for an -- an average person?
 18 Maybe that -- maybe that's too difficult for you --
 19 you know, a hypothetical person, let's give it a
 20 hypothetical person.
 21 MR. STOY: Object to the form.
 22 THE WITNESS: Yeah.
 23 MR. STOY: Objection. Incomplete
 24 hypothetical.
 25 (Whereupon, a brief discussion off the

Page 152

1 record.)
 2 THE WITNESS: I was -- I was starting the
 3 shortest answer is that it's complicated. It
 4 depends on the person. It changes year to year
 5 depending on healthcare reform or not. There are
 6 just so many variables to consider here I don't
 7 think I could give you an answer that would fit
 8 within my seven hours probably.
 9 BY MR. MIGLIACCIO:
 10 Q. Yeah. Let me try to -- let me try to put
 11 some specificity around this and see if we can fit
 12 within the seven hours.
 13 Medicare. Who -- who -- who's eligible in
 14 this country?
 15 A. Broadly speaking, there are two types of
 16 people that are eligible for Medicare. People that
 17 are above 65 and people with some disability. There
 18 are also special populations such as people that
 19 have renal failure and get dialysis.
 20 Q. Let's say somebody's over the age of 65,
 21 right, they're eligible for Medicare.
 22 Who pays for Medicare for that person who
 23 is eligible for it?
 24 A. There are several levels to this.
 25 Medicare is a government program so the government

Page 153

1 runs -- the government funds Medicare through
 2 taxpayer dollars. There are -- again, I could give
 3 you a longer answer, but I think the shorter answer
 4 is that it's a government-run program that is funded
 5 by taxpayer dollars and administered by private
 6 contractors.
 7 So who pays, it could be like any of
 8 those, it could be the taxpayers, it could be the
 9 government, or it could be the private contractors
 10 that administer Medicare in different jurisdictions.
 11 Q. Where does the money ultimately come from?
 12 MR. STOY: Object to the form.
 13 BY MR. MIGLIACCIO:
 14 Q. For that person's healthcare?
 15 A. As I said, it -- you know, one way to
 16 trace it back is, you know, taxpayers fund the
 17 Medicare program.
 18 Q. Yeah. Got it.
 19 So if there is a person -- strike that.
 20 I'll -- I'll ask it a different way.
 21 Have you done any research into -- I think
 22 you were -- you had talked about the research you've
 23 done with diagnoses and trying -- and I don't want
 24 to misstate it. What was that research again?
 25 A. It was research on the diagnostic process,

<p style="text-align: right;">Page 154</p> <p>1 the -- yeah, I think I would just succinctly sum it 2 up as the research on the diagnostic process. 3 Q. And then that related to Afib, right, 4 atrial fibrillation, or was that a different? 5 A. The guidelines research is related to 6 atrial fibrillation. 7 Q. Got it. 8 What are the -- 9 A. Go ahead. 10 Q. What -- what are the risks associated with 11 some -- with -- with an individual or a patient 12 population who does not get timely treatment for 13 atrial fibrillation? 14 MR. STOY: Object to the form. 15 THE WITNESS: Your question was whether -- 16 what are the risks for patients that don't get 17 timely treatment for atrial fibrillation. 18 I think this is actually -- so I was going 19 to say that my research on diagnoses is not 20 necessarily the research on atrial fibrillation. 21 The research on atrial fibrillation is my research 22 on guidelines. Timeliness of diagnosis is not 23 really an issue with atrial fibrillation. 24 Atrial fibrillation's a chronic condition. 25 Most people have it, you know, by the time they're</p>	<p style="text-align: right;">Page 156</p> <p>1 error. 2 Q. Got it. 3 With respect to pricing, is it fair to say 4 that industry and government agencies use averages 5 for pricing certain things? I'll say, for instance, 6 gasoline? 7 MR. STOY: Object to the form. Objection 8 beyond -- to the extent it's beyond the scope. 9 THE WITNESS: Do you want to be more 10 specific about how they use the averages? 11 BY MR. MIGLIACCIO: 12 Q. Well, even if there is variation in the 13 real world, I mean, doesn't -- can't you determine 14 the average price of gasoline? 15 A. I think the question is whether the 16 average price of gasoline, in this case the average 17 price of a service used in screening, is the 18 relevant object. 19 Of course you can calculate an average but 20 the question you should ask is whether it's the 21 right average for the right patient population and 22 whether it's the only thing that matters. 23 Obviously, we -- we measure standard 24 deviation in variants in a lot of settings because 25 we care about variation. So the question is not</p>
<p style="text-align: right;">Page 155</p> <p>1 very old. And the question here is how you should 2 treat atrial fibrillation, not whether you should 3 diagnose it or how do you diagnose it. 4 BY MR. MIGLIACCIO: 5 Q. Got it. 6 The research you did on diagnoses, were 7 those for any particular disease? Did they focus on 8 anything specific? 9 A. The research is motivated very broadly. 10 The paper where I dig into a specific clinical 11 setting in depth is in the presentation of patients 12 in the emergency department with potential 13 pneumonia. 14 Q. And what was your conclusion there? 15 A. That there are real possibilities of 16 Type I and Type II error in the diagnosis process. 17 That there are questions about how many people we 18 should diagnose or not. 19 But more importantly, there are questions 20 about diagnostic accuracy. You could diagnose the 21 same number of people but have a much higher 22 accuracy in doing so. And that the diagnostic 23 process is not just a simple test like a chest x-ray 24 but it also involves human interpretation and 25 involves a system of care that could be prone to</p>	<p style="text-align: right;">Page 157</p> <p>1 whether we can measure an average, but it's whether 2 that average is the right measure for what we want 3 to do. 4 Q. Uh-huh. You use averages in your own 5 work; isn't that fair to say? 6 MR. STOY: Object to the form. 7 THE WITNESS: Again, the question is what 8 average am I using. You know, if you're using an 9 average in your research paper, you have to defend 10 that that's the right average, that that's the 11 average that we care about. And you -- if you're 12 not, you should expect pushback from your peers 13 about whether you're using the right average or not. 14 BY MR. MIGLIACCIO: 15 Q. Can you give me some examples of where 16 you've used an average and where you've had pushback 17 and where you've defended it? 18 MR. STOY: Object to the form. Objection. 19 Beyond the scope of his report. 20 THE WITNESS: I can't remember the last 21 time I personally got pushback, but I could imagine 22 getting pushback if you are saying that you're 23 interested in one patient population and you're 24 giving the average for another patient population. 25</p>

<p style="text-align: right;">Page 158</p> <p>1 BY MR. MIGLIACCIO:</p> <p>2 Q. Got it.</p> <p>3 So like two distinct patient populations.</p> <p>4 What would be an example of like one patient</p> <p>5 population and an average for a different one? Can</p> <p>6 you -- can you give me one?</p> <p>7 A. Yes, I think in this case it would be the</p> <p>8 average -- if you're using the average price -- the</p> <p>9 private insurance price for some general patient</p> <p>10 population that isn't well defined and you're</p> <p>11 applying that to the patients that took at-issue</p> <p>12 valsartan. Those would be two different patient</p> <p>13 populations.</p> <p>14 Q. I think you stated in your report that</p> <p>15 the -- when you looked at some of the data, that you</p> <p>16 saw the average age of a valsartan -- of somebody</p> <p>17 who took one of the valsartan-containing drugs was</p> <p>18 63 years old.</p> <p>19 Do you remember that?</p> <p>20 A. Yes, I do. I would have to look...</p> <p>21 Q. Yeah, I'll -- I see that.</p> <p>22 MR. STOY: And, Nick, while he's</p> <p>23 looking --</p> <p>24 MR. MIGLIACCIO: Yeah.</p> <p>25 MR. STOY: -- we're coming up on noon</p>	<p style="text-align: right;">Page 160</p> <p>1 record. The time is 12:36 p.m.</p> <p>2 BY MR. MIGLIACCIO:</p> <p>3 Q. All right. Dr. Chan, I want to ask you a</p> <p>4 few questions.</p> <p>5 I want to go back to paragraph 42 briefly</p> <p>6 of your report. And you have -- I think you detail</p> <p>7 Figure 2 and discuss risk factors for specific</p> <p>8 populations.</p> <p>9 A. Okay.</p> <p>10 Q. I think I'm going to read the last</p> <p>11 sentence of paragraph 42 which states, "Even with</p> <p>12 these substantial relative risks, again, only age</p> <p>13 and smoking history are used to define the specific</p> <p>14 population recommended for colorectal and lung</p> <p>15 cancer screening."</p> <p>16 Did you detail the relative risk of age</p> <p>17 for colorectal cancer in this paragraph?</p> <p>18 A. Not in this in paragraph. It might be</p> <p>19 detailed somewhere else in the report, but I can't</p> <p>20 find it right now.</p> <p>21 Q. Okay. All right.</p> <p>22 Yeah, well I couldn't find it either so,</p> <p>23 you know, I -- if we have more time I might ask you</p> <p>24 to look and see or at least tell me where it can be</p> <p>25 found.</p>
<p style="text-align: right;">Page 159</p> <p>1 Dr. Chan's time so just --</p> <p>2 MR. MIGLIACCIO: Yeah.</p> <p>3 MR. STOY: -- keep that in mind.</p> <p>4 MR. MIGLIACCIO: Sure. Are you hungry,</p> <p>5 Dr. Chan, if you want to eat something, please just</p> <p>6 say the word because I was starving before and I</p> <p>7 don't want you --</p> <p>8 THE WITNESS: I could -- I could certainly</p> <p>9 eat, yeah. I could definitely eat.</p> <p>10 MR. MIGLIACCIO: Please do. We could</p> <p>11 take -- we could take a break.</p> <p>12 THE WITNESS: Okay.</p> <p>13 MR. MIGLIACCIO: Yeah.</p> <p>14 THE WITNESS: You want to do 30 minutes?</p> <p>15 MR. MIGLIACCIO: That's fine with me.</p> <p>16 MR. STOY: Will that be okay with the</p> <p>17 overall time constraints, Nick?</p> <p>18 MR. MIGLIACCIO: I think so. I -- I</p> <p>19 really -- I do. And I'm -- because I think even</p> <p>20 from now we have like five hours and I think --</p> <p>21 MS. HILTON: Can we go off the record?</p> <p>22 THE VIDEOGRAPHER: We're off the record at</p> <p>23 11:56 a.m. Pacific time.</p> <p>24 (Whereupon, a brief recess was taken.)</p> <p>25 THE VIDEOGRAPHER: We are back on the</p>	<p style="text-align: right;">Page 161</p> <p>1 A. Yeah.</p> <p>2 Q. Because I did not see it myself.</p> <p>3 But in the meantime, I will go back and</p> <p>4 ask you some other questions.</p> <p>5 We were talking, I think, before the break</p> <p>6 about pricing of medical services and -- you know, I</p> <p>7 want to ask you about Dr. Song. If you would agree</p> <p>8 that he's qualified to offer the opinions that he</p> <p>9 has offered?</p> <p>10 MR. STOY: Object to the form. Objection</p> <p>11 to the extent it calls for a legal conclusion with</p> <p>12 regard to qualifying Dr. Song as an expert.</p> <p>13 THE WITNESS: Yeah, I'm not sure if I can</p> <p>14 qualify -- I'm qualified to assess whether he's</p> <p>15 qualified.</p> <p>16 BY MR. MIGLIACCIO:</p> <p>17 Q. Would you agree he's well respected in the</p> <p>18 field?</p> <p>19 MR. STOY: Object to form.</p> <p>20 THE WITNESS: I'm -- I'm not sure how to</p> <p>21 characterize that. I know him.</p> <p>22 BY MR. MIGLIACCIO:</p> <p>23 Q. Okay. Have you ever cited his work in any</p> <p>24 of your own publications?</p> <p>25 A. I'm not sure if I have.</p>

Page 162

1 Q. Would you agree that the publications that
 2 Dr. Song relied upon are well accepted and
 3 peer-reviewed in his report?
 4 MR. STOY: Object to the form.
 5 THE WITNESS: I'm not sure -- can you
 6 restate that again?
 7 BY MR. MIGLIACCIO:
 8 Q. Yeah.
 9 Would you agree that the publications that
 10 Dr. Song relied upon in his report, and I know
 11 you've reviewed it for purposes of yours, would you
 12 agree that the publications that he relied upon are
 13 well accepted and peer-reviewed?
 14 MR. STOY: Objection to form.
 15 THE WITNESS: I don't remember going over
 16 his -- the sources that he relied upon in detail.
 17 And I'm not sure how I would characterize whether a
 18 publication is well accepted or not.
 19 BY MR. MIGLIACCIO:
 20 Q. What do you recall of the -- of the
 21 publications that Dr. Song relied upon?
 22 A. I don't recall much. I would have to look
 23 at his report again to refresh my memory.
 24 Q. Okay. I can -- I think we have that.
 25 Let's -- let's go get that. Bear with me. I can

Page 163

1 try to pull that up for you. I'm going to try to
 2 make this work on my end. So I won't -- I'll move
 3 on to something while -- while I'm trying to do
 4 that.
 5 I'm going to ask you about some of -- of
 6 your own publications. And I think I -- we had
 7 discussed before the break that it's -- the average
 8 age of a valsartan user was 63 years old. I think
 9 we -- you -- that's what you detailed in your
 10 report, right?
 11 A. Yeah, I would need to look at the relevant
 12 paragraph, but that sounds right, yep.
 13 Q. Which paragraph was that?
 14 A. I see something in paragraph 65. Is that
 15 what you're referring to or...
 16 Q. I think that that is what I was referring
 17 to.
 18 A. Okay.
 19 Q. It looks to me that you -- that that data
 20 was based on data that you -- 63.3 years old, right?
 21 And this data was pulled in 2018; is that right?
 22 A. Where do you see that it was pulled in
 23 2018?
 24 Q. I'm going to believe that is what I have.
 25 I'm going to try to find a citation for you. I seem

Page 164

1 to have lost it for the time being.
 2 But would you agree with me that if --
 3 that if the average age of a valsartan user is 63,
 4 and for us, and here, that the class concludes
 5 several years ago, in 2018, would you agree that
 6 this class, the proposed class that we have defined,
 7 the majority of the class would be -- would be on
 8 Medicare? Can you agree with that, if the age
 9 was -- is 63 years old, the average age?
 10 MR. STOY: Objection. Form. Incomplete
 11 hypothetical.
 12 THE WITNESS: I'm not sure if I can agree
 13 with that. I think we could probably look at that
 14 in more detail. But just based on these facts
 15 alone, I'm not sure if that necessarily leads to
 16 that conclusion.
 17 BY MR. MIGLIACCIO:
 18 Q. What data did you rely upon to determine
 19 that the average age of a valsartan user was
 20 63.3 years old?
 21 A. I believe what is cited in that sentence
 22 comes from another study.
 23 Q. Okay.
 24 A. In footnote number 87.
 25 Q. Uh-huh.

Page 165

1 A. And I think that would be -- it might have
 2 been some summary statistics calculated in that
 3 study.
 4 Q. Got it.
 5 Do you know if that was a meta-analysis,
 6 that study?
 7 A. It might have -- it likely drew from other
 8 previous studies.
 9 Q. Got it. Got it.
 10 I'm going to show you, if I can now,
 11 Dr. Song's report. And hopefully I'll be able to
 12 bring it into your folder here.
 13 MR. MIGLIACCIO: This will be Exhibit 4.
 14 (Whereupon, Chan Exhibit 4 was marked for
 15 identification.)
 16 BY MR. MIGLIACCIO:
 17 Q. Once I rename it.
 18 A. Okay.
 19 Q. You should have it now, hopefully.
 20 A. Yes.
 21 Q. Okay. So I had asked you about the
 22 publications that he uses and used in his -- in
 23 his -- in his report. I wanted to know if they were
 24 authoritative, well accepted or peer-reviewed, but I
 25 want -- you know, I know you've looked at this in

Page 166

1 detail and it's, you know, fairly lengthy but I
 2 wanted to ask you if anything here jumps out at you
 3 as -- as being none of those things, any of the
 4 sources he cites?
 5 A. Are you asking me to refer to the
 6 materials relied upon for him?
 7 Q. Right.
 8 MR. STOY: I'm just going to put an
 9 objection on the record to -- I mean, there's over a
 10 hundred cites here, so...
 11 THE WITNESS: Yeah, I'm not sure if I'll
 12 be able to look through this and pull out any
 13 sources that don't meet those criteria. There's
 14 certainly some of these that are not peer-reviewed.
 15 And I'm not sure what you mean by
 16 authoritative and well accepted still. It's
 17 something could be very appropriate for one purpose
 18 but not very appropriate for the purposes that we
 19 require in this case.
 20 We might have a -- an article that is very
 21 appropriate when it describes the ratio of prices
 22 between private insurance and Medicare for that
 23 audience but would not be appropriate if we're
 24 trying to apply it to this case. So what you mean
 25 by well accepted and authoritative is -- depends on

Page 167

1 what you're using it for.
 2 BY MR. MIGLIACCIO:
 3 Q. Okay. Let me restate my question.
 4 A. Okay.
 5 Q. You -- you -- you reviewed his report in
 6 detail, right, in -- before you offered your
 7 opinions?
 8 A. I reviewed his report. I am not sure what
 9 you mean by "in detail." I have the hours that I
 10 reported in terms of how long I spent on reading his
 11 report.
 12 Q. You did not in your report that -- the
 13 document that you've produced, you did not identify
 14 any publications that Dr. Song relied upon that, in
 15 your mind, were suspect, did you?
 16 MR. STOY: Objection. Form.
 17 THE WITNESS: Not specific sources that I
 18 thought were suspect.
 19 BY MR. MIGLIACCIO:
 20 Q. Okay.
 21 A. But, again, some of these sources are fine
 22 for one purpose but not fine for the purposes that
 23 we need in this case and I think in my report I do
 24 describe those.
 25 Q. Which sources, and can you point me to

Page 168

1 those specifically?
 2 A. I'm not sure which paragraph I mentioned
 3 this. But I think it gets to the point of averages
 4 for a different patient population are not the
 5 averages that we want here. This has to do with
 6 needing to know how various quantities that we care
 7 about, such as prices or such as what services are
 8 going to be used, how they might correlate with
 9 patient characteristics in patients who might be in
 10 a class, and whether those data to come up with
 11 those averages even exists anywhere that anybody
 12 could use to calculate the relevant average.
 13 Q. Can you direct me to that, to that portion
 14 of your report?
 15 A. Sure. Let's see. Let me go back to my
 16 report. Now it's kind of hard -- which exhibit is
 17 it, is my report?
 18 Q. Yeah, I'm sorry, I renamed them. I
 19 believe it's Exhibit 2.
 20 A. 2. Okay. Let's see.
 21 I think paragraph 100 speaks a little to
 22 this.
 23 When you say something is correlated with
 24 something else, then you can't just calculate the
 25 average of that something else without knowing what

Page 169

1 you're conditioning on in the first place. So if
 2 something is correlated that means the average that
 3 you care about might change if you switch
 4 populations.
 5 Q. And, again, you -- you -- you do know that
 6 this population has not been determined with
 7 finality, right?
 8 A. Right. But I know that it would likely be
 9 different than the sources that Dr. Song is relying
 10 upon and I also think that it wouldn't be feasible
 11 even to measure that with the data that we have.
 12 Q. Well, why do you think it would not be
 13 feasible?
 14 A. Because the data have not been made
 15 public.
 16 Q. Which data have not been made public?
 17 A. Many of the pricing data have not been
 18 made public and how that correlates with individual
 19 characteristics of patients that would determine
 20 what services we need to recommend for the medical
 21 monitoring program. The cost sharing agreements in
 22 these contracts are not public. There are a number
 23 of different components to evaluating spending that
 24 would not be public.
 25 Q. Isn't it fair to say, though, that, you

Page 170

1 know, the government knows how much it spends
 2 annually on -- on Medicare?
 3 A. That, again, is an average.
 4 Q. Uh-huh.
 5 A. That's an overall -- that's an average for
 6 how much it's spending for the entire population of
 7 Medicare patients. So there's two problems with
 8 that. Number one, there could be patients in the
 9 class that are not Medicare patients. And number
 10 two, there are Medicare patients that aren't in our
 11 class.
 12 Q. Right. I -- but the government
 13 nonetheless can determine how much it spends for
 14 the -- for the whole population, right? I mean,
 15 that -- that is --
 16 A. Of patients --
 17 Q. -- that is --
 18 A. Of patients under Medicare. But, again,
 19 that's abstracting away from the possibility that we
 20 care about cost sharing, which I'm still not clear
 21 about if we're -- it depends on who -- you know, my
 22 understanding is that the class is any -- any
 23 payments that the patients would have to make for
 24 monitoring, not the payor.
 25 So first, that's one issue. And then

Page 171

1 another --
 2 Q. Where do you draw that -- I'm sorry,
 3 Doctor, to interrupt you.
 4 But where do you draw that -- how -- how
 5 did you come across that assumption? Where -- where
 6 do you -- where do you draw that assumption from?
 7 A. I think that would be -- I think I
 8 discussed this in my -- my assignment and my
 9 understanding of the complaint.
 10 Q. Okay.
 11 A. Let's see.
 12 So in paragraph 8, it says, "The proposed
 13 medical monitoring class consists of individuals
 14 'who consumed a sufficiently high Lifetime
 15 Cumulative Threshold of NDMA, NDEA, or other
 16 nitrosamine, in generic valsartan-containing drugs
 17 manufactured by or for Defendants."
 18 So the -- the class are the individuals
 19 who consumed this. It's not named that the
 20 third-party payors are in that class. This is in
 21 contrast to the other class of economic loss where
 22 the third-party payors are included in that class.
 23 And that's in paragraph 9.
 24 Q. So that -- that is how you have reached
 25 that conclusion, that is how you -- you have that

Page 172

1 assumption, right?
 2 A. That's my understanding of the complaint.
 3 Q. Did anybody provide that understanding to
 4 you or did you just -- is that your understanding,
 5 sitting here with your own interpretation?
 6 A. That's my understanding after having read
 7 the complaint and bringing this up with the
 8 attorneys involved in the case.
 9 Q. And if you read the beginning portion of
 10 paragraph 8, "In regards to the proposed medical
 11 monitoring class, I further understand that, among
 12 the remedies requested, Plaintiffs seek" -- you
 13 know, quote -- "seek injunctive and monetary
 14 relief, including creation of a fund to finance
 15 independent medical monitoring services."
 16 Where do you -- or do you see within that
 17 language any implication with respect to cost
 18 sharing?
 19 A. It just reads to -- it read to me that the
 20 class for medical monitoring were patients, and
 21 third-party payors were explicitly not included.
 22 They were not named in that class. And that is
 23 contrast with the second class of economic loss
 24 where third party payors are explicitly named.
 25 Q. So that's the basis for your -- for that

Page 173

1 assumption and that conclusion?
 2 A. Correct.
 3 Q. And you're not -- not a lawyer, right?
 4 A. No.
 5 Q. Okay. And this -- this -- this assumption
 6 was also provided to you, or in part, by counsel; is
 7 that correct?
 8 A. That is --
 9 MR. STOY: Objection. Asked -- hang on.
 10 Objection. Asked and answered.
 11 Objection. Form. To the extent it misstates what
 12 he previously testified to.
 13 THE WITNESS: Correct. I previously said
 14 that I read the complaint.
 15 MR. STOY: Go ahead.
 16 THE WITNESS: This distinction, I noticed
 17 this distinction in the complaint, and I
 18 discussed -- I discussed this idea with the lawyers
 19 involved in this case.
 20 BY MR. MIGLIACCIO:
 21 Q. I see.
 22 And is it fair to say that if you -- how
 23 many class action complaints have you read?
 24 A. This is my first one.
 25 Q. First one. Got it.

<p style="text-align: right;">Page 174</p> <p>1 Is it fair to say that if you -- if this</p> <p>2 assumption was incorrect with respect to cost</p> <p>3 sharing that it would alter your opinions in some</p> <p>4 fashion?</p> <p>5 MR. STOY: Object to the form.</p> <p>6 THE WITNESS: I don't know if you want to</p> <p>7 clarify what you mean by "alter in some fashion,"</p> <p>8 but there are -- there's a section in my report on</p> <p>9 cost sharing.</p> <p>10 BY MR. MIGLIACCIO:</p> <p>11 Q. Uh-huh.</p> <p>12 A. And that is under the assumption that we</p> <p>13 are interested in what patients are paying.</p> <p>14 If we are not interested in what patients</p> <p>15 are paying and there is some other concept that is</p> <p>16 not well defined, it would need to be defined first,</p> <p>17 and it would likely -- it's possible that could lead</p> <p>18 to other variation that's unaccounted for.</p> <p>19 Q. The question of variation of cost sharing,</p> <p>20 if cost sharing wasn't an issue, there would be no</p> <p>21 issue with respect to variation of cost sharing,</p> <p>22 right?</p> <p>23 MR. STOY: Object to form. Incomplete</p> <p>24 hypothetical.</p> <p>25 THE WITNESS: I guess what I'm saying is</p>	<p style="text-align: right;">Page 176</p> <p>1 consider variation in cost sharing.</p> <p>2 BY MR. MIGLIACCIO:</p> <p>3 Q. Got it.</p> <p>4 Paragraph 117 in your report, you state</p> <p>5 that -- let me know when you are there.</p> <p>6 A. I'm here.</p> <p>7 Q. Yep. 117.</p> <p>8 A. Yep.</p> <p>9 Q. Yep. Okay.</p> <p>10 A. Yes.</p> <p>11 Q. I'm looking for where I -- you state in</p> <p>12 the middle, "Given the substantial price variation</p> <p>13 that I summarize above, there is no reason to</p> <p>14 believe that the average prices experienced by a</p> <p>15 proposed" -- "proposed class members is the same as</p> <p>16 the average prices experience" -- "experience by the</p> <p>17 nation as a whole."</p> <p>18 I think you just said that earlier.</p> <p>19 A. Yeah.</p> <p>20 Q. Isn't it fair to say that you have not</p> <p>21 made an effort to determine the extent to which you</p> <p>22 say the average prices experienced by proposed class</p> <p>23 members is the same as the average prices</p> <p>24 experienced by the nation as a whole? You haven't</p> <p>25 tried to -- to determine that?</p>
<p style="text-align: right;">Page 175</p> <p>1 that we need to specify what is the object that we</p> <p>2 are interested in quantifying. Even if there is no</p> <p>3 cost sharing, there's a difference between charges</p> <p>4 and difference between charges and costs and</p> <p>5 ultimate amount that's reimbursed plus patient cost</p> <p>6 sharing.</p> <p>7 There's many different kind of optics that</p> <p>8 we could be considering, and we would need to define</p> <p>9 that first. And some objects will entail other</p> <p>10 sources of variation.</p> <p>11 BY MR. MIGLIACCIO:</p> <p>12 Q. But cost sharing would no longer be a</p> <p>13 source of variation if we're not talking about cost</p> <p>14 sharing?</p> <p>15 A. You're saying but cost sharing would no</p> <p>16 longer be of interest if we're not talking about</p> <p>17 cost sharing?</p> <p>18 Q. No, would no longer be a source of</p> <p>19 variation if -- if -- if it's not at issue in this</p> <p>20 case?</p> <p>21 MR. STOY: Objection. Incomplete</p> <p>22 hypothetical.</p> <p>23 Go ahead.</p> <p>24 THE WITNESS: If the assumption is that</p> <p>25 cost sharing is not at issue, then we would not</p>	<p style="text-align: right;">Page 177</p> <p>1 A. In the report I do say how patients that</p> <p>2 take valsartan are different than patients who don't</p> <p>3 take valsartan. That is evidence in that direction.</p> <p>4 But more broadly, in my report, I would</p> <p>5 say that it would be infeasible to determine the</p> <p>6 prices for patients in the class as -- for reasons I</p> <p>7 just told you, including the unavailability of data.</p> <p>8 Q. Well, if we take the cost sharing out,</p> <p>9 which we'll -- we placed aside for these</p> <p>10 discussions, what other data do you contend is -- is</p> <p>11 unavailable?</p> <p>12 A. Should we also define over what time span</p> <p>13 this is going to be for?</p> <p>14 Q. What -- what time span a medical</p> <p>15 monitoring program will be for?</p> <p>16 A. Right.</p> <p>17 Q. Well, I think we can define it within a</p> <p>18 finite period of time. We could say one year for --</p> <p>19 for purposes of our discussion.</p> <p>20 A. So you --</p> <p>21 Q. I'm -- I'm just -- I'm giving you a</p> <p>22 hypothetical to say could you determine that for --</p> <p>23 for one year how much something would cost?</p> <p>24 MR. STOY: So you're not -- you're not --</p> <p>25 that's not a stipulation, huh, Nick?</p>

<p style="text-align: right;">Page 178</p> <p>1 MR. MIGLIACCIO: No, that's a 2 hypothetical. To aid in the calculations here. 3 THE WITNESS: So we're not looking into 4 the future by very much. We're going to restrict 5 patients only to those who have Medicare. 6 BY MR. MIGLIACCIO: 7 Q. Uh-huh. 8 A. And we know exactly whether screening is 9 appropriate for every single patient individually, 10 then we could calculate the prices for patients in 11 Medicare for this year. 12 Q. Got it. 13 Have you made any effort -- you know, 14 since you -- you don't believe that the -- the 15 prices experienced by class members are the same as 16 the prices experienced nationwide, what efforts have 17 you made to determine how far off you believe them 18 to be? 19 A. I think this is supported by a few 20 analyses in the report. So it's supported by the 21 fact that patients who take valsartan are different 22 than patients who don't take valsartan. It's 23 supported by the variation in price among patients 24 seeing the same provider, MGH. 25 It's supported by also variation in price</p>	<p style="text-align: right;">Page 180</p> <p>1 class"? 2 A. So, for example, 5th percentile means 3 5 percent of the population is -- is, you know, at 4 the 5th percentile or below. Or 95th percentile is 5 5 percent of the population is at or above this 6 price. 7 So if you have a class that's 5 percent of 8 the population you could be as unlucky to get 9 something that's 400 percent off if you compare the 10 5th to the 95th percentile. 11 Q. When we're talking about the size of the 12 class, how do you mean in terms of a small class, a 13 big class, what do you mean by that? 14 A. So -- so kind of implicit in my previous 15 answer is you would ask how many people are in this 16 class and how many people are in the overall 17 population of the nation. That's one way of asking 18 that. 19 Or if you are -- even if under the 20 assumption that all members of the class -- you were 21 able to measure prices for some bigger sub -- bigger 22 set of people that include everybody in this set, 23 included people in the class, which I don't think is 24 true, you could use that bigger population. 25 So in our previous example where we're</p>
<p style="text-align: right;">Page 179</p> <p>1 that I -- that I show in other -- other exhibits 2 like figures -- Figure 9, "OptumHealth commercial 3 pricing," variation for the proposed procedures. 4 So if there's variation -- if there's no 5 variation then you would be much more confident that 6 the averages shouldn't differ between groups of 7 patients. But if there's a lot of variation, that 8 tells you that there's a lot of scope for averages 9 for one population differing from averages for 10 another population. And that, I think, is enough 11 evidence to show that you could be wildly off. 12 Q. When you say "wildly off," like, can you 13 ballpark that percentage? 14 A. Yeah, I mean, I think that's what some of 15 these figures do. You could be off by a factor of 16 like 400 percent if -- especially if the class is 17 not a big class. 18 If the class is a subset of patients who 19 took at-issue valsartan, it's a small population 20 relative to the entire population. And therefore, 21 you could be -- you could be in the 5th percentile 22 or in the 95th percentile and the difference between 23 the 5th and the 95th percentile for one given 24 provider is 400 percent. 25 Q. How do you define like a -- "not a big</p>	<p style="text-align: right;">Page 181</p> <p>1 only talking about the Medicare patients, we would 2 look at Medicare patients and we'd ask how big is 3 Medicare patients relative to the size of our class. 4 Q. And what are your -- do you have 5 assumptions with respect to the size of the class 6 here? 7 A. No. 8 Q. You have no assumptions? 9 A. No. 10 Q. Okay. 11 A. I mean, I -- I -- I have some intuition 12 that it's not going to be 50 percent of the U.S. 13 population. 14 Q. But no assumption on -- on -- on the size, 15 the number, the -- the -- you know, how many people 16 other than that intuition? 17 A. I haven't -- yeah, I haven't -- no. 18 Q. Have you asked for that information? 19 A. I so far have not asked for that 20 information, but I think that would be relevant for 21 moving forward. I wouldn't -- you know, I would 22 reserve the right to look at that in the future. 23 Q. Got it. 24 So for calculating the prices as we just 25 went through that hypothetical, in a limited</p>

Page 182

1 fashion, that we -- that we could calculate the
 2 prices for -- for patients in Medicare for a year,
 3 could you calculate that for two years?
 4 A. So I say in my report the farther into the
 5 future that you get, the more uncertain this is
 6 going to be.
 7 Q. Yeah.
 8 A. It's going to be more uncertain for
 9 private insurance than for Medicare, but even within
 10 Medicare, the Medicare budget changes every year,
 11 the conversion factor between RVUs and dollars could
 12 change and does change every year.
 13 The geographic price indices between
 14 different regions in the country, that changes. It
 15 could change quite drastically. For example, Alaska
 16 doubled in one year.
 17 So the farther that you move out, even
 18 within Medicare, there would be more uncertainty on
 19 prices alone.
 20 But I think the bigger point, this might
 21 not be -- this is kind of a combination of both
 22 Kaplan and Song, is that we can't evaluate the
 23 overall spending for a medical monitoring program
 24 only by asking about prices. We have to ask what
 25 are the services that are going to be rendered and

Page 183

1 this -- there's a lot of uncertainty about what
 2 those services would be the farther we move out.
 3 Q. So how would -- you know, would it be
 4 possible to do two years if you knew what the
 5 services are or the menu of service?
 6 A. I said it's -- it's possible, but it
 7 becomes more uncertain.
 8 Q. Okay.
 9 A. Moving from one year to two years.
 10 Q. How about three years?
 11 A. More uncertain then.
 12 Q. Okay. So your work in the NBER, do you
 13 ever work on budgeting, working in the NBER?
 14 A. The government budget?
 15 Q. Or -- or have you ever dealt with
 16 budgeting issues working in that capacity, in -- in
 17 that --
 18 A. Can you clarify what you mean by
 19 "budgeting issues"?
 20 Q. Where the government, the federal
 21 government seeks to budget things out into the
 22 future, right, isn't that typically how the federal
 23 government works, they have a budget and it -- they
 24 have amounts that -- that are -- that are set into
 25 the future?

Page 184

1 MR. STOY: Object to the form.
 2 THE WITNESS: I'm familiar somewhat with
 3 how the budget for Medicare has been set.
 4 BY MR. MIGLIACCIO:
 5 Q. What -- what is your familiarity with
 6 that?
 7 A. So there is some budgeting into the future
 8 but this could be changed by Congress any given
 9 year.
 10 Q. Uh-huh. How -- tell me, how is it -- what
 11 is your familiarity of how -- how does Medicare get
 12 budgeted into the future?
 13 A. It's very complicated. I know that a lot
 14 of it has to do with politics. I know that one
 15 example of this is called a "doc fix" where in order
 16 to have a balanced budget there was some promise to
 17 eventually lower prices on medical spending for
 18 physician services but every year or every couple of
 19 years there'd be a delaying of this.
 20 So I think there is quite a bit of
 21 political influence on what the Medicare budget is.
 22 It's not some formula that gets set by something
 23 that's free of politics and is kind of -- you know,
 24 is -- is let to run in some predetermined fashion.
 25 Q. How far out does the Medicare budget get

Page 185

1 set; do you know?
 2 A. I think in -- as I said, in practice, it
 3 could change in a year.
 4 Q. Uh-huh.
 5 A. So by definition it's not in practice set
 6 in stone.
 7 Q. And is it determined annually, on an
 8 annual basis?
 9 A. I think it could change at any point.
 10 Q. The government knows how much it spends on
 11 Medicare for a given year, right?
 12 MR. STOY: Objection. Asked and answered.
 13 THE WITNESS: For -- for a given year, I
 14 believe the government could track down how much it
 15 spent on Medicare.
 16 BY MR. MIGLIACCIO:
 17 Q. Do you believe -- you know, is it your
 18 opinion that for one price to be representative of
 19 another, they would need to be the same?
 20 A. Say that again.
 21 Q. Is it your opinion that for one price to
 22 be representative of another, they would need to be
 23 the same?
 24 A. For one price to be representative of
 25 another price, the two prices would have to be the

Page 186

1 same?

2 Q. Yes. That -- that's what I'm asking you.

3 A. I'm not sure what I -- I'm not -- I'm not

4 sure I understand that question. Sorry.

5 Q. So if you were to -- if you were to

6 attempt to estimate the prices for a -- a patient

7 population, would you -- you would look at

8 representative prices, right; is that something that

9 you would do?

10 MR. STOY: Objection. Incomplete

11 hypothetical.

12 THE WITNESS: What do you mean by

13 "representative prices"?

14 BY MR. MIGLIACCIO:

15 Q. You would look at average prices?

16 A. Average prices. I'm not sure -- yeah, I'm

17 not sure I understand, like -- ultimately, what we

18 want to do is to be able to quantify total spending.

19 I'm not sure what we mean by "average prices."

20 Like, is there some weighting to the

21 prices? The average prices alone don't -- some

22 unweighted version of average prices is not going to

23 tell you how much we are going to spend in a medical

24 monitoring program.

25 Q. I'm going to direct you to paragraph 117.

Page 187

1 You can tell me when you are there.

2 A. Yes.

3 Q. Yeah. I mean, you discuss Dr. Song's

4 proposed estimates.

5 A. Uh-huh.

6 Q. Based on national averages and -- and you

7 say, "not average prices specific to members of the

8 proposed class."

9 A. Uh-huh.

10 Q. And you say, "Given the substantial price

11 variation that I summarize above, there is no reason

12 to believe that the average price" -- "prices

13 experienced by proposed class members is the same as

14 the average prices experience by the nation as a

15 whole."

16 A. Uh-huh.

17 Q. So my question to you is, that given that

18 you don't believe the prices experienced by class

19 members are the same as the prices --

20 A. Uh-huh.

21 Q. -- experienced nationwide, what efforts

22 have you made to determine how far off they are,

23 like how far off do they vary?

24 A. I think as I said before, the analyses

25 that show that the class members -- or people that

Page 188

1 take valsartan are different than people who don't

2 take valsartan and that prices vary in several of

3 the analyses that I do within Optum or within MGH

4 suggests that they could vary quite a bit.

5 Q. They could. But -- but have you

6 determined that they do?

7 A. I think my level of certainty is quite

8 high that they do vary. I haven't seen any evidence

9 to suggest that they would be the same.

10 Q. So how much do they vary?

11 A. In order to -- in order to do this you

12 would have to first specify the class, right?

13 Q. Right. And the class has not yet been

14 determined.

15 A. Right.

16 Q. Class hasn't been certified. So have

17 you --

18 A. But I can tell you that --

19 MR. STOY: Hang on, Dr. Chan. I don't

20 think there was a question pending.

21 BY MR. MIGLIACCIO:

22 Q. So have you determined, then, how much

23 they vary here?

24 MR. STOY: Objection. Asked and answered.

25 THE WITNESS: If there's no class, then I

Page 189

1 wouldn't be able to -- and I think this is part of

2 the problem of -- of defining a class. First you

3 would need to know who -- you would need to define

4 the class in order to ask whether it's feasible

5 to -- the class would of course have to be captured

6 by either a -- fully captured by Medicare data or

7 fully captured by sources of data that are publicly

8 available in order for you to ask how would the

9 prices differ for members of the class versus

10 other -- other patients.

11 What we can do is that we know that

12 patients who take valsartan are different than

13 patients who don't take valsartan. That's a

14 starting point. That would suggest that these

15 patients are -- there's no reason why you would

16 think that -- so patients who take valsartan have,

17 you know, hypertension. They have heart failure.

18 And those by construction, like the fact

19 that they take valsartan implies certain medical

20 conditions that other patients don't have. You

21 would expect that patients that have certain medical

22 conditions to have different forms of insurance.

23 And if you have different forms of

24 insurance, you would expect that the prices should

25 be different for those patients than for patients

<p style="text-align: right;">Page 190</p> <p>1 who don't take valsartan. 2 BY MR. MIGLIACCIO: 3 Q. If we disregard the cost sharing, right, 4 that -- that -- that different forms of insurance 5 issue falls away, right? 6 A. No. If you are saying, you know, some 7 patients might be more likely to be covered under 8 the VA or some patients might be more likely to have 9 private insurance, again it all depends on what 10 object you really want to focus on. 11 Even if you disregard cost sharing and you 12 say it's the object of how much the insurance 13 company pays providers, which I'm not sure is 14 what -- it hasn't been specified exactly what the 15 object should be, but if that is the object, that 16 would depend on whether the patient has private 17 insurance or Medicare or is a patient at the VA. 18 Q. But, again -- and -- and I -- I mean, I 19 think you've answered this, but I want to make sure 20 that I understand it. 21 You have not made any effort to determine 22 whether prices experienced -- whether the prices for 23 class members would vary by a certain percentage 24 from the national average prices? 25 A. I just don't have the --</p>	<p style="text-align: right;">Page 192</p> <p>1 think there's -- I mean, you point to them. Do you 2 think there's some -- are -- are they useful for -- 3 for your -- for your opinion? 4 A. I don't think they would -- they're enough 5 for us to estimate how much paying for medical 6 monitoring would be for this class. 7 Q. But you used them to argue that -- or to 8 opine, rather, that -- that it -- that it can't be 9 estimated; is that right? 10 A. In some of the stuff that you've read from 11 my report, I say that the national average price is 12 different from -- for the -- different than the 13 price that would be applicable for members of the 14 class. 15 Q. And -- and you -- you don't have that 16 delta, you don't have that difference? 17 A. I don't think anybody has that. And I 18 don't think it would be feasible to calculate it 19 because you can't calculate the price. 20 Q. Is it fair to say that you can get much 21 more locally accurate commercial-to-Medicare price 22 ratios by using data that show local variations in 23 these ratios? 24 MR. STOY: Object to form. 25 THE WITNESS: Can you restate that</p>
<p style="text-align: right;">Page 191</p> <p>1 MR. STOY: Objection. 2 Hang on. 3 Objection. Asked and answered. 4 Go ahead. 5 THE WITNESS: I don't have the data to do 6 that. You can -- you can demonstrate that patients 7 who take valsartan are different than patients who 8 don't, but I don't have all of their private 9 insurance prices that they are facing, like -- and I 10 don't think anybody has those data. 11 BY MR. MIGLIACCIO: 12 Q. So -- so you -- you don't have an answer, 13 then. You don't -- you -- you have not reached 14 the -- 15 A. Yeah. And I think it's an opinion that 16 it's not really answerable unless you have much more 17 detailed data sources than are publicly available. 18 Q. Would you agree that Medicare prices are 19 available by geography at the state and local level? 20 A. Medicare prices are available, yes, 21 Medicare prices are available if you know the 22 provider type and if you know the geography and if 23 you know the service. 24 Q. Do you -- do you think that the national 25 average prices are useful in your analysis? Do you</p>	<p style="text-align: right;">Page 193</p> <p>1 question? 2 BY MR. MIGLIACCIO: 3 Q. Yeah. 4 Can you get much more locally accurate 5 commercial-to-Medicare price ratios by using data 6 that shows local variations in these ratios? 7 MR. STOY: Object to form. 8 THE WITNESS: I think my point is that you 9 actually don't observe the real ratios for many -- 10 for -- in many settings and for many providers, for 11 many insurers. 12 We have, like, limited -- we have limited 13 data. For example, Optum is from a specific class 14 of insurers. We have hospital prices for certain 15 insurers. But we don't have the data relevant that 16 we would need for the prices of this medical class. 17 So we wouldn't be able to calculate the ratios. 18 BY MR. MIGLIACCIO: 19 Q. This is a general question as to whether 20 you can get more locally accurate 21 commercial-to-Medicare price ratios by using data 22 that shows local variation in these ratios? 23 A. Do the data exist? Is it available? 24 Q. Would you agree to that, yes? 25 A. I don't think the data are available.</p>

Page 194

1 Q. You don't think -- you don't think that
2 there is data that allows you to get much more
3 locally accurate commercial-to-Medicare price
4 ratios, you don't think it exists?
5 A. I think we could get data that are more
6 locally accurate than the data that Dr. Song relies
7 upon. But I don't think we have data available to
8 get us what would be the relevant spending for a
9 medical monitoring program for this class that has
10 not yet been specified.
11 Q. Tell me about the more accurate local
12 data. Where does that data exist? Where can you
13 get it?
14 A. That is quite hypothetical.
15 I -- you know, I think -- what Dr. Song
16 relies upon is -- or at least in his report, is a --
17 to my understanding, it's a paper that measures
18 private insurance prices for some population of
19 patients that's aggregated and compares that with
20 Medicare prices. So certainly you could do better
21 than that.
22 There are data on private insurance prices
23 that are incomplete. So, you know, they're
24 incomplete. They -- they -- they leave out
25 populations of patients. They're only in certain

Page 195

1 settings.
2 They may or may not have geographic
3 identifiers. And if you have geographic
4 identifiers, then you could come up with something
5 that is more, in your words, local to a geography.
6 But geography is not the only variation that we need
7 to account for.
8 Q. When you say certainly you can do better
9 than that, what -- in your last answer, what do you
10 mean by that and how much better could you do?
11 A. What I mean is that in Dr. Song's
12 methodology he's using a ratio from a paper that is
13 not published for this purpose. It's some average
14 ratio in some population of patients that is almost
15 certainly different than the population of patients
16 that we care about in this class. And it's a single
17 ratio.
18 And if you wanted to get more granular,
19 you could look at different locations, if there are
20 geographic identifiers. And that's what I mean by
21 you could do better. If you wanted to have
22 something that accounted for geographic variation in
23 the ratios, you could use local prices from -- and
24 private insurance, but those prices would omit, you
25 know, classes of patients that I just mentioned and

Page 196

1 so they wouldn't -- there would be shortcomings
2 there.
3 So -- so there -- there are different
4 dimensions in which prices vary. Geography is one
5 of them. And there are others that you might
6 actually be worse. If you're focusing on, say,
7 Optum data, Optum data are only from a certain class
8 of private insurers. So you might do worse if you
9 focus only on Optum data.
10 Q. What would those shortcomings be? Could
11 you quantify how big they would be? How big -- how
12 big would we be from the truth? Like, how far off?
13 A. I can tell you that there's big variation.
14 If there's big variation that the potential
15 shortcomings could be as large as the variation.
16 Q. Do you know how -- have you quantified how
17 large the variation could be?
18 A. It's possible that the variation could be
19 as large as 400 percent.
20 Q. What is the basis for that opinion?
21 A. The basis of that opinion is that there's
22 variation between the 5th and the 95th percentile in
23 prices that is as large as 400 percent and if you
24 have a class that is the size that's small enough,
25 say, 5 percent of the population, then you could

Page 197

1 have very unfortunate variation where it's -- you
2 get your 400 percent off.
3 Q. Isn't it fair to say that most people
4 reside in the center of the histogram and not at the
5 tail ends, at the 5 percent or the 95th percentile?
6 A. It depends on the population.
7 MR. STOY: I was going to object to the
8 form.
9 THE WITNESS: It depends on the
10 population. If you say do most doctors reside in
11 the center of the overall U.S. population in terms
12 of income, the answer would be no. Most doctors
13 reside in the top 5 percent.
14 BY MR. MIGLIACCIO:
15 Q. Right. And I'm not asking about income
16 but I -- you know, I appreciate that.
17 I'm asking about, you know, healthcare
18 spending or healthcare prices that people -- that
19 would be paid for a person.
20 A. I think healthcare spending exhibits some
21 of the same properties as income. So there are big
22 kind of skewed -- they're -- they are not normally
23 distributed actually, the healthcare spending.
24 They're obviously all positives so they're not
25 normally distributed. They could be log-normally

<p style="text-align: right;">Page 198</p> <p>1 distributed. So there is a possibility that you 2 have skewed distributions and you could have 3 outliers. 4 This is well known, that certain regions 5 in the U.S. spend way more than others. There 6 are -- there are -- for example, McAllen, Texas, 7 versus San Antonio, Texas. So there could be -- you 8 could actually have a small population that is in 9 the tails of the distribution. The tails can be 10 quite large. 11 Q. Do you have any reason to believe that 12 people who ingested contaminated valsartan are not 13 in the middle of the population? 14 A. I don't have any reason to believe that 15 they are in the middle of the population because by 16 definition they have -- you know, first of all, we 17 would have to look at where -- who's in the class. 18 I mean -- so if you just say people who 19 take valsartan versus people who don't take 20 valsartan, that's a little bit easier and then you 21 could say are they similar to the average 22 population. I think probably not. They have heart 23 failure. They have hypertension. 24 Are they similar to some population maybe, 25 like you would have to work on specifying that</p>	<p style="text-align: right;">Page 200</p> <p>1 center of the histogram chart -- 2 A. It depends on -- 3 Q. -- even though -- 4 A. It depends on the population you're 5 talking about. If you're comparing two populations, 6 there's no guarantee that the most -- by -- it 7 depends on the distribution. It depends on whether 8 you're talking about one or two populations. In 9 this case, we're talking about two populations. 10 So you're asking whether most people in 11 one population falls in the center of another 12 population. There's no reason to believe that. 13 Q. But there's also no reason to believe they 14 reside in the tail ends, right? 15 A. I think there's something that 16 distinguishes the population that takes valsartan. 17 They have heart failure. They have hypertension. 18 There is something that distinguishes them. And 19 I -- I don't know if most of the population has 20 heart failure. Probably most of the population 21 doesn't have heart failure. 22 Q. Does not. So you're saying -- 23 A. Does not. 24 Q. -- you have -- you don't think -- but do 25 you -- do you think the majority of the population</p>
<p style="text-align: right;">Page 199</p> <p>1 population, but it's not clear to me how you would 2 specify that population that they're similar to. 3 Q. And -- but you have not done this analysis 4 to determine where a population of people who 5 consumed valsartan-containing drugs, contaminated 6 valsartan, where they would fall, right? 7 A. Again, I'm not sure if it's feasible to do 8 this analysis if you want to account for private 9 insurance prices and so forth. 10 Q. But to answer my question, you haven't 11 done it? 12 A. I have done an analysis to show how 13 patients who take valsartan are different than 14 patients who don't take valsartan. 15 I haven't done an analysis to show what 16 would the average price be for patients who take 17 valsartan compared to patients who don't take 18 valsartan, but I don't think an analysis could be 19 done if you want to account for private insurance 20 prices. 21 Q. Fair to say that you would have a reason 22 to assume that a -- that -- that our proposed class 23 would be in the middle because that's where most 24 people are, right? Most people -- isn't that -- 25 isn't there the -- most people do just fall into the</p>	<p style="text-align: right;">Page 201</p> <p>1 that takes valsartan has heart failure? 2 A. I would need to look further into that. 3 Q. You're not offering that opinion here? 4 A. I'm not offering that opinion. I'm just 5 offering the opinion that there are obvious 6 differences between people that take valsartan and 7 people who don't. 8 Some of this is in my report that 9 describes the characteristics of people who take 10 valsartan versus people who don't take valsartan. 11 Q. How would heart failure impact Medicare 12 costs for -- for the screening services that 13 Dr. Kaplan has detailed in his report? 14 A. Right. So as I mentioned in my report, 15 heart failure or just medical comorbidities would 16 impact whether somebody is a candidate for screening 17 or whether somebody has preferences that would make 18 screening make sense. 19 Heart failure is a disease for whom most 20 adults have a relatively limited life expectancy if 21 they have it. And given that, that would impact the 22 decision for whether somebody should be screened for 23 cancer. 24 Q. So it would impact -- and your opinion is 25 it impacts the decision of whether screening would</p>

<p style="text-align: right;">Page 202</p> <p>1 need to be done, but it doesn't impact the price, 2 the cost for a fixed service, right? 3 A. Oh, I see. For your -- your price -- 4 Q. Yeah. 5 A. Your question's about price? 6 Q. Correct. 7 A. If you have heart failure, that could 8 certainly -- and you don't have Medicare, that could 9 certainly impact the type of insurance that you 10 have. If you're a sick patient with heart failure 11 versus a healthy patient without heart failure, and 12 you're choosing between private insurance plans, you 13 would pick a different insurance plan if you have 14 heart failure, likely. 15 Q. Assuming the person is on Medicare? 16 A. Assuming the person is not on Medicare. 17 Q. That's your assumption, the person is not 18 on Medicare? 19 A. Correct. 20 Q. Got it. 21 But I mean, as we looked at, the average 22 age for a valsartan -- somebody who takes valsartan 23 was 63, right, that was with that -- that 63.3, and 24 the age of Medicare is 65, right? 25 A. Right. The -- the age --</p>	<p style="text-align: right;">Page 204</p> <p>1 interrupt you. 2 A. I think what I was saying earlier is that 3 patients may choose different insurance plans and 4 different insurance plans may have different prices. 5 Q. And you -- have you done that analysis 6 here to determine what that -- what that 7 differential might be? 8 A. For MGH in particular, I show that the 9 differential could be quite a bit. 10 Q. Have you done it for any other hospital 11 system? 12 A. No, but I think MGH is quite illustrative. 13 Q. I want to show you some of your -- I think 14 some of your papers. 15 MR. STOY: Hey, Nick, would this -- 16 MR. MIGLIACCIO: Yeah. 17 MR. STOY: Would this be a good time to 18 take ten? 19 MR. MIGLIACCIO: Sure. Yeah, we can do 20 that. 21 THE VIDEOGRAPHER: Okay. We're off the 22 record. The time is 1:41 p.m. Pacific time. 23 (Whereupon, a brief recess was taken.) 24 THE VIDEOGRAPHER: We are back on the 25 record. The time is 1:57 p.m. Pacific time.</p>
<p style="text-align: right;">Page 203</p> <p>1 Q. Eligibility. 2 A. -- of Medicare eligibility is 65. If the 3 average age is -- again, I think you asked this 4 question before. 5 If I know the average age is 63, can I say 6 that the majority of patients on valsartan is on 7 Medicare? And I think I said that I wouldn't be 8 able to automatically reach that conclusion. It 9 could be -- because you would need to know the 10 entire distribution. 11 Like, for example, if the distribution is 12 a normal distribution, and half the people are above 13 63 and half the people are below 63, you could have 14 close to half of the people not being on Medicare. 15 It all depends on the shape of the distribution, not 16 just the average of the distribution. 17 Q. If -- if you take away the cost sharing 18 issue that we talked about at some length, right, 19 the fact that somebody may have heart failure or a 20 comorbidity shouldn't impact the cost for a fixed 21 service, right? 22 MR. STOY: Object to the form. 23 THE WITNESS: For -- I -- 24 BY MR. MIGLIACCIO: 25 Q. For a screening service. I'm sorry to</p>	<p style="text-align: right;">Page 205</p> <p>1 BY MR. MIGLIACCIO: 2 Q. All right. Dr. Chan, I want to ask you a 3 few questions about some of your own academic 4 publications. And I'm going to move into the 5 exhibit -- the file of paper that you have submitted 6 to the New England Journal of Medicine. 7 Here we go. I can do it. All right. I 8 thought I got -- was getting the hang of this. 9 Okay. 10 MR. MIGLIACCIO: It will be Exhibit 5. 11 (Whereupon, Chan Exhibit 5 was marked for 12 identification.) 13 MR. MIGLIACCIO: And it is a New England 14 Journal of Medicine document. 15 Q. Let me know when you have a chance to see 16 it. 17 A. It's open. 18 Q. Okay. Great. 19 So is it -- is it fair to say that you 20 have asserted in your own work the importance of a 21 common methodology when it comes to the pricing of 22 medical services? 23 MR. STOY: Object to the form. 24 THE WITNESS: Is there a -- a part of this 25 article you'd like to draw my attention to?</p>

<p style="text-align: right;">Page 206</p> <p>1 BY MR. MIGLIACCIO:</p> <p>2 Q. I'm asking you generally. I mean, it's --</p> <p>3 it's a nine-page article. I'll ask you some</p> <p>4 specifics, but I -- that's a general question.</p> <p>5 A. Can you ask that again?</p> <p>6 Q. Sure.</p> <p>7 Is it fair to say that you have asserted</p> <p>8 in your own work the importance of a common</p> <p>9 methodology when it comes to the pricing of medical</p> <p>10 services?</p> <p>11 MR. STOY: Object to the form.</p> <p>12 THE WITNESS: I'm not sure. I...</p> <p>13 BY MR. MIGLIACCIO:</p> <p>14 Q. In this paper, you discuss using median --</p> <p>15 median time values in defining benchmarks versus</p> <p>16 mean values.</p> <p>17 Do you see that in the Discussion section?</p> <p>18 A. Uh-huh.</p> <p>19 Q. Then you go on to say that you use medians</p> <p>20 as an alternative, right?</p> <p>21 A. Uh-huh.</p> <p>22 Q. And you write "average" or "on average"</p> <p>23 roughly nine times in -- in this study, right?</p> <p>24 I mean, you can look for it.</p> <p>25 A. Right, yep, 9 percent. Is that right?</p>	<p style="text-align: right;">Page 208</p> <p>1 it a lot?</p> <p>2 A. I think this is similar to our previous</p> <p>3 discussion about the use of averages in research.</p> <p>4 It -- it's important to use the right averages.</p> <p>5 In this case, you know, this is not a</p> <p>6 paper just comparing one average with another</p> <p>7 average. It's a paper that is comparing the average</p> <p>8 for a given procedure in a survey with an average in</p> <p>9 a nationally representative data source that --</p> <p>10 or -- sorry.</p> <p>11 It's -- it's an average in a data source</p> <p>12 that measures the time of how long this surgery</p> <p>13 takes, called NSQIP, and we are asking whether these</p> <p>14 two averages match up. And this is actually a</p> <p>15 research finding. It's not -- it's not -- we're</p> <p>16 actually asking whether the two averages for a given</p> <p>17 procedure match up. It's not -- it's not</p> <p>18 predetermined that they would match up.</p> <p>19 So it's -- it's kind of like -- it's a --</p> <p>20 it's a -- it's a research inquiry to ask whether</p> <p>21 using this average is representative of another</p> <p>22 average. And in this case, these two measures do</p> <p>23 closely follow each other, but it's not a foregone</p> <p>24 conclusion that they would.</p> <p>25 Q. But it's fair to say that, you know,</p>
<p style="text-align: right;">Page 207</p> <p>1 Q. No. I said you used the word "average" --</p> <p>2 A. Oh.</p> <p>3 Q. -- throughout and -- throughout the --</p> <p>4 A. Oh, okay.</p> <p>5 Q. -- paper.</p> <p>6 A. Yeah. I think -- yeah, go ahead. Sorry.</p> <p>7 Q. Yeah. And I do see that you -- that --</p> <p>8 that 9 percent, is that the average that you --</p> <p>9 you've reached ultimately?</p> <p>10 A. No, actually, that paragraph is an example</p> <p>11 where...</p> <p>12 Q. I'm sorry, were you finishing --</p> <p>13 A. No, I'm -- I'm reading it.</p> <p>14 Q. Okay.</p> <p>15 A. Sorry.</p> <p>16 Q. Please, no, go ahead. I didn't mean to --</p> <p>17 don't mean to interrupt your reading.</p> <p>18 A. Yeah, I think that discussion is just</p> <p>19 saying that there are different ways of -- different</p> <p>20 moments in a distribution to consider. Mean is one,</p> <p>21 or average. And the other one is median. And they</p> <p>22 just tell you different things.</p> <p>23 Q. Would you say this emphasis of averaging,</p> <p>24 the importance of averaging across data points, is</p> <p>25 it -- is it important in your research? Do you do</p>	<p style="text-align: right;">Page 209</p> <p>1 whether -- whether it was right or wrong, right,</p> <p>2 whether -- whether the -- whether they matched or</p> <p>3 they didn't, it's a common methodology to average,</p> <p>4 right? You used a common methodology, a methodology</p> <p>5 of averaging to determine if they -- if they would</p> <p>6 match the national average, right?</p> <p>7 MR. STOY: Object to the form.</p> <p>8 THE WITNESS: I don't know what you mean</p> <p>9 by common method -- I mean, I don't...</p> <p>10 BY MR. MIGLIACCIO:</p> <p>11 Q. You used the methodology of averaging,</p> <p>12 right?</p> <p>13 A. Not really. I don't think that's what</p> <p>14 we're doing here.</p> <p>15 Q. I thought you just told me that you were</p> <p>16 determining -- you were looking at something</p> <p>17 national versus another dataset --</p> <p>18 A. Uh-huh.</p> <p>19 Q. -- and to see if -- if they matched on</p> <p>20 average?</p> <p>21 A. We were asking whether average times for a</p> <p>22 given procedure matched average survey responses.</p> <p>23 This is a research question. It's not a common</p> <p>24 methodology per se. I'm not sure what you mean by</p> <p>25 "common methodology."</p>

Page 210

1 Q. Well, you used -- I mean, you -- you did
 2 these calculations to see if -- if -- if they would
 3 match, right, that's what you did?
 4 A. That's maybe in one exhibit in this --
 5 okay. There are several exhibits in this -- in this
 6 paper.
 7 Exhibit 1, Figure 1, asks whether -- this
 8 is kind of -- it's kind of most directly related to
 9 what you're saying, which is the -- whether the
 10 average time that we observe in one dataset matches
 11 the average survey in another -- a survey response
 12 for the time in another dataset.
 13 Now, Figure 2 is doing something very
 14 different, which is asking about discrepancy.
 15 That's, you know -- and discrepancy that kind of
 16 changes over time. So that's not just comparing
 17 averages.
 18 Figure 3 is asking about the implications
 19 of discrepancy on different surgical specialties
 20 such as orthopedic surgery, urology, general
 21 surgery, showing that these implications can be
 22 large in terms of dollar terms.
 23 For example, orthopedic surgery is paid
 24 more than \$150 million more than what it would get
 25 if they had resorted to another measure. And

Page 211

1 cardiothoracic surgery is paid about \$125 million
 2 less than it would have been paid if it kind of used
 3 another measure.
 4 And then Figure 4 is asking whether
 5 discrepancies are kind of resolved with
 6 re-evaluation. So it's focusing on the
 7 discrepancies.
 8 So I don't think this paper, overall, is
 9 only about comparing averages. It's about -- it's
 10 much more.
 11 Q. Got it. I understand.
 12 So -- and I appreciate that clarification.
 13 But for -- for Figure 1, who did the
 14 averaging work? Was that something that you did or
 15 your team did in -- in gathering -- in gathering the
 16 dataset and averaging it?
 17 A. I don't know if I would characterize
 18 Figure 1 as like a dataset of just doing averaging
 19 work. It's -- this work overall was done by me and
 20 my research team. Some of them are coauthors on
 21 this paper. Others are research assistants.
 22 Q. What was -- what did you do beyond just
 23 averaging it?
 24 A. I would say that's just the first step.
 25 We need a dataset with -- we chose these averages

Page 212

1 for this one particular exercise. But as I said, we
 2 also could do it in terms of medians instead of
 3 averages.
 4 Q. Uh-huh.
 5 A. And in this exercise, it was a regression.
 6 So after you have each individual observation, which
 7 is a procedure, a surgical procedure is one
 8 observation -- or a surgical procedure at a given
 9 point in time is one observation. We have many
 10 observations of these. Then we run a regression
 11 that kind of fits a line on these points here.
 12 Q. When you say you could also use the
 13 median, what did you do with respect to the median?
 14 A. So instead of using an average time from
 15 the NSQIP data we could use the median time. That's
 16 just a different moment in the distribution.
 17 Q. Uh-huh.
 18 A. And so when we do that, I mention
 19 discussion that we get a different result if we use
 20 the median instead of the average.
 21 Q. Got it.
 22 What was -- what's the difference?
 23 A. It's a 9 percent difference in this case.
 24 Q. Between the average and the median?
 25 A. Uh-huh.

Page 213

1 Q. Got it. Okay.
 2 Who did that work in determining the
 3 median information, was that you or --
 4 A. The same research team.
 5 Q. Got it. Got it.
 6 And that's a methodology that you -- that
 7 you use frequently determining medians?
 8 A. Often. Oftentimes the median is a better
 9 measure. If the distribution is skewed, you might
 10 want to use the median instead of the average.
 11 Q. Got it.
 12 Are there other measures other than median
 13 and average that you use --
 14 A. Yes.
 15 Q. -- in analyzing datasets?
 16 A. Quantiles, like I -- like I mentioned in
 17 the -- like I use in the report, there's like
 18 95th percentile, 5th percentile. There's a --
 19 they're -- those are called quantiles.
 20 Q. Quantiles.
 21 A. And sometimes you kind of work with logs,
 22 like log -- logarithmic transformation. So you
 23 might take a mean of the log instead of a -- just
 24 the mean. So you first take a log, logarithm, of
 25 the value, then you take the mean.

<p style="text-align: right;">Page 214</p> <p>1 Q. And you use that methodology as well in 2 your work as an economist, as a healthcare 3 economist? 4 A. Yeah, I'm not sure if I'd call it a 5 methodology. They're just different kind of ways 6 to -- ways to characterize distributions. 7 Obviously, the most comprehensive way is 8 just to show the entire distribution but you might 9 focus on various moments of the distribution. You 10 can focus on quantiles and medians, on averages. 11 You might transform the distribution by first 12 applying a logarithm to it, then taking an average. 13 And that's quite different than just taking the 14 average of the underlying distribution. 15 So there are various kind of 16 transformations of the underlying data and there are 17 different ways to characterize a distribution. 18 Q. When you -- if you were to do that, 19 what -- what would -- what does it do to take the -- 20 I think you said take a -- first apply a logarithm 21 to it and then take an average? 22 A. Uh-huh. 23 Q. What -- what -- can you explain that a 24 little bit more? 25 A. Many distributions are skewed. For</p>	<p style="text-align: right;">Page 216</p> <p>1 reliable. 2 Q. Uh-huh. Got it. Got it. 3 Let me -- I want to show you something 4 else. Bear with me. Okay. 5 I just put in what we'll make as 6 Exhibit 6, which is your -- your national -- your 7 New England Journal of Medicine response letter. It 8 should be coming up right quickly. 9 (Whereupon, Chan Exhibit 6 was marked for 10 identification.) 11 THE WITNESS: Yes. 12 BY MR. MIGLIACCIO: 13 Q. Let me know if you have that. 14 A. I do. 15 Q. Okay. So this study received three formal 16 published critiques in the form of letters to the 17 editor, right? 18 A. Uh-huh. 19 Q. And you responded to those critiques, 20 correct? 21 A. Yes. 22 Q. Okay. And I think -- is it fair to say 23 you acknowledged some limitations of the study 24 including some special cases where your methodology 25 was less applicable --</p>
<p style="text-align: right;">Page 215</p> <p>1 example, income or spending, medical spending. So 2 it would be quite fragile if you were to actually 3 take an average of the underlying distribution of 4 spending and it would be much more robust if you 5 took a logarithm. 6 What a logarithm does is it transforms a 7 variable that ranges from just above zero to a very 8 large number, to something that's much more well 9 behaved and symmetric -- potentially around zero, so 10 it transform -- it might transform something to a 11 more normal distribution. 12 And that's kind of -- earlier in my 13 deposition I mentioned something called a log-normal 14 distribution. 15 Q. Uh-huh. 16 A. That is something that only starts looking 17 like a normal distribution when you take a 18 logarithm. 19 Q. Got it. 20 You used -- and used that methodology, 21 too, in -- in -- when you create averages? 22 A. Yeah, again, I'm not sure if I would call 23 it methodology. It's just a way of transforming -- 24 it's -- it's a very basic mathematical operation to 25 transform data into something that more -- is more</p>	<p style="text-align: right;">Page 217</p> <p>1 A. Uh-huh. 2 Q. -- but you went on to defend the study by 3 arguing that, and I quote, "Our study goal was to 4 identify and characterize forms of inaccuracy in the 5 RUC's time estimates and develop a general approach 6 for obtaining better estimates. The crux of that 7 approach is the use of large, longitudinal data 8 sources." 9 A. Uh-huh. 10 Q. And, "We welcome debate, reflection, and 11 refinements regarding the most appropriate data 12 sources and estimation techniques." 13 Did I read that correctly? 14 A. Yes. 15 Q. Is it fair to say that you were using 16 estimation techniques in your -- in -- in your 17 paper, in the underlying paper? 18 A. Estimation techniques. 19 I'm just going to read this again. 20 Q. Yeah, I want you to -- please take -- 21 A. Yeah. 22 Q. Feel free. 23 A. I believe this reply in the critiques are 24 almost entirely about multi-procedure -- cases where 25 more than one procedure is done at the same time; is</p>

<p style="text-align: right;">Page 218</p> <p>1 that right? That's my interpretation of -- upon 2 re-reading the reply. 3 Q. Is it fair to say that you used estimation 4 techniques? 5 MR. STOY: Object to the form. 6 THE WITNESS: I'm not sure what you mean 7 by "estimation techniques." 8 BY MR. MIGLIACCIO: 9 Q. So I'm just going to read the last 10 sentence of your reply, which is, "We welcome 11 debate, reflection, and refinements regarding the 12 most appropriate data sources and estimation 13 techniques." 14 Do you see that? 15 A. Uh-huh. 16 Q. What did you mean by that? 17 A. I think I meant -- so the entire goal of 18 this -- this committee called the RUC, the relative 19 value scale update committee, is to form estimates 20 of certain things that are going to go into the 21 decision-making process of how much to price a 22 procedure for Medicare. 23 So they have a technique, which is to, you 24 know, use surveys and ask physicians how long they 25 spend on a given procedure. That's their estimation</p>	<p style="text-align: right;">Page 220</p> <p>1 is about time. 2 Q. Uh-huh. Is it fair to say there's a -- 3 there's variation in time that surgical procedures 4 take across different people -- 5 A. Yes. 6 Q. -- of patient populations? 7 A. Yes. 8 Q. And what is the R -- the RUC? What -- 9 what is the -- what is RUC seeking to do? What is 10 the purpose of RUC? 11 A. The purpose of the RUC is to make 12 recommendations to how Medicare might price services 13 in the Medicare physician fee schedule. 14 Q. Got it. 15 So there may be variations across patients 16 for patient populations that are reflected in NSQIP. 17 RUC seeks to price those services regardless of the 18 variations; is that fair? 19 A. Sometimes, you know, it might change. 20 This is -- you know, it's a good question. Like 21 sometimes, because things vary so much, you might 22 decide to have two different services instead of one 23 service. 24 Q. Uh-huh. 25 A. So it's --</p>
<p style="text-align: right;">Page 219</p> <p>1 technique. And so this paper is about the accuracy 2 of their estimation technique and what's reflected 3 in another data source, in this case, the NSQIP. 4 So I'm not sure if I would say I use 5 estimation techniques or I'm commenting on how their 6 estimation technique compares with measures in 7 another data source. 8 Does that make sense? 9 Q. I -- I think so. 10 What -- what is the NSQIP? 11 A. This is the National Surgical Quality 12 Improvement Program data source that measures time 13 spent on various procedures. 14 Q. How does it do that? 15 A. That is a good question. I'm not 16 intimately knowledgeable about exactly all of the 17 mechanisms that are put in place. But it records 18 the time that a surgery -- a surgical procedure is 19 started and it records the time that the surgical 20 procedure is ended. 21 I would assume that this takes some type 22 of report by the surgeon in question to report the 23 starting and the ending time, and then once you have 24 those, you can -- you -- you measure the amount of 25 time a given procedure took. So here an estimation</p>	<p style="text-align: right;">Page 221</p> <p>1 Q. But the same service, the same service, 2 same price, right? 3 A. But you could -- so how you define 4 services is completely -- it's a -- it's not set in 5 stone. 6 For example, colonoscopy has multiple 7 services associated with that, right, it's 8 colonoscopy with clipping. Sometimes you could, 9 like, define a service based on the patient that's 10 getting the service. 11 So when you say one service and it's very 12 different and there's only one price, that's not 13 entirely accurate because medical societies, the 14 AMA, you know, when they figure out how to design 15 CPT codes, they could actually specify different 16 services if those -- if that single service is 17 different enough in different cases. 18 Q. But there are certain codes, right, so -- 19 so if you have -- and I understand that the service 20 could -- there might be different types of 21 colonoscopies. But let's talk about the one that -- 22 I think you said colonoscopy with clipping, right? 23 That's one code, right? 24 A. I -- I would have to review the codes. 25 There -- there might be multiple codes.</p>

Page 222

1 Q. Okay. Let's take -- let's hypothetically
 2 take one, right, one code. If that code is being
 3 priced, the RUC seeks to -- to -- to impose a price
 4 on that code regardless of whether there might be
 5 variation of the time spent providing the service in
 6 that particular code; is that fair?

7 A. What I'm saying is that the American
 8 Medical Association does not necessarily take that
 9 as given. The American Medical Association, which
 10 houses both the RUC and the CPT committee, can
 11 recommend that we have two different CPT codes and
 12 not one CPT code.

13 Q. Sure. But in each CPT code there is one
 14 price being paid; is that right?

15 A. For a given CPT code in a given year and
 16 given geography for a given type of provider,
 17 Medicare pays one price.

18 Q. Got it.

19 Regardless of the variation of the patient
 20 population that receives that service or regardless
 21 of whether the service might take longer in one
 22 individual patient versus another?

23 A. That I'm not a hundred percent sure. I
 24 know that there's a lot more nuance than even I am
 25 aware of.

Page 223

1 For example, if Medicare is -- is paying a
 2 teaching hospital or the hospital has like sicker
 3 patients in a -- some type of disproportionate
 4 service pool where the patients are underserved,
 5 Medicare can still deviate from its fee schedule and
 6 pay a higher price. They can pay different prices,
 7 even if...

8 So what I just told you is a very stylized
 9 world where it's just the geography, the type of
 10 provider, the year, and the service. But largely
 11 that's true for Medicare, but even -- even then,
 12 there's a lot -- there's more nuance than I think
 13 somebody who is steeped in Medicare would be able to
 14 tell you.

15 Q. When you say "largely that's true," you
 16 know, what percentage -- you know, how true would
 17 that be, you know, would you say 95 percent true,
 18 99 percent true? Do you have an estimate?

19 A. I can't really give you a number right
 20 now, no.

21 Q. Does such a number exist somewhere?

22 A. It should. It should exist somewhere.

23 You can -- go ahead.

24 Q. Sorry.

25 A. I think you could do the analysis by

Page 224

1 looking at individual Medicare claims and asking to
 2 what extent is the Medicare reimbursement fully
 3 determined by the characteristics that I just told
 4 you.

5 Q. Is there a central -- is data kept on
 6 deviation from the schedule? Does that data exist?

7 A. For Medicare? Yes.

8 Q. Uh-huh. It does?

9 A. Yes.

10 Q. Okay. And that data would be the data
 11 that we would look at to determine, you know,
 12 whether and what percentage there -- there may be a
 13 deviation from the schedule on the whole?

14 A. Right. For -- for Medicare? Yes.

15 Q. Got it.

16 So for the Medicare prices, then, that we
 17 just talked about, taking aside the deviation that
 18 we don't -- haven't characterized, those prices are
 19 knowable, right, depending on the geography, the
 20 services provider -- you listed a few different
 21 items, but those prices are knowable, right?

22 MR. STOY: Object to the form.

23 THE WITNESS: Aside from the deviations,
 24 yeah. For Medicare, yes.
 25

Page 225

1 BY MR. MIGLIACCIO:

2 Q. Got it.

3 Do you use Medicare data in your work? Is
 4 that -- is that information that you -- you use a
 5 lot in your academic work?

6 A. I use it to some extent.

7 Q. What extent do you use it?

8 A. It's hard for me to place a percentage on
 9 it. I would say nontrivial extent, probably not the
 10 majority of my work.

11 Q. What -- okay.

12 I'm going to show you another paper here.
 13 Bear with me.

14 MR. MIGLIACCIO: I'm going to name this
 15 Exhibit 7.

16 (Whereupon, Chan Exhibit 7 was marked for
 17 identification.)

18 BY MR. MIGLIACCIO:

19 Q. And it is a paper that you published in --
 20 let's see. I'll tell you in a second.

21 That was published in -- can you see it
 22 now -- Quarterly Journal of Economics?

23 A. Uh-huh.

24 Q. Okay. Great.

25 I'll give you a chance to look at that.

Page 226

1 A. Yep.
 2 Q. Okay.
 3 A. Uh-huh.
 4 Q. Okay. This study, you focused on health
 5 insurance prices, right?
 6 A. Study focuses on pricing recommendations
 7 from the same company that I just described, the
 8 RUC.
 9 Q. Uh-huh.
 10 A. And it looks at Medicare prices. It also
 11 looks at private insurance prices.
 12 Q. Got it.
 13 You use the term "average" eight times in
 14 this paper.
 15 A. Uh-huh.
 16 Q. Is that right?
 17 A. I would need to check. I don't have
 18 any --
 19 Q. Yep.
 20 A. -- reason to dispute it.
 21 Q. Okay.
 22 A. Actually, I think --
 23 Q. More than that.
 24 A. It says 17 times.
 25 Q. Yeah, that's what I got, too. Glad I'm

Page 227

1 wearing my reading glasses. I can -- I can --
 2 A. Yeah.
 3 Q. I wasn't before.
 4 A. I say "median" twice.
 5 I see -- say "standard deviation"
 6 probably -- it's tucked with standardized so --
 7 let's see. There it is. I say "standard deviation"
 8 five times.
 9 I say "variants" once. "Covariants" once.
 10 I say "variation" 32 times.
 11 Q. I see the standardized, too. Let's --
 12 let's look at that.
 13 What did you do to standardize this in --
 14 you said -- and I'm looking at Figure 3. I think.
 15 A. Uh-huh. Figure 3?
 16 Q. Yeah -- or actually, I'll look at where --
 17 where you say on page -- I guess on page 1316.
 18 A. Uh-huh.
 19 Q. The bottom of the first paragraph,
 20 "Finally, for interpretation, we standardize" -- and
 21 I won't try to say that equation because I'll mess
 22 it up -- "by subtracting the sample mean and
 23 dividing by the sample standard deviation, and
 24 denote this standardized measure."
 25 What -- so tell us what you did with

Page 228

1 respect to standardizing.
 2 A. The standard -- the term "standardize"
 3 means to do exactly that, you subtract the mean and
 4 you divide by the standard deviation. The mean is
 5 the first moment and the standard deviation's the
 6 second. It's the square root of the second moment.
 7 And the second moment is a measure of variation.
 8 Q. I see.
 9 So what -- what is the -- you were a math
 10 major, right, I think I saw that in your resumé.
 11 A. Yes.
 12 Q. I could see how that would come in handy
 13 once you move into economics.
 14 What is the benefit of standardizing the
 15 dataset that you -- that you standardized here? Why
 16 did you do it?
 17 A. The primary benefit is that you can
 18 then -- you become -- you make the scale of the
 19 variation the same between two different variables.
 20 So you're standardizing -- if you divide it by the
 21 standard deviation, it means that you're not going
 22 to have one data -- one set of observations that --
 23 values that range from, say, zero to, like, 8,000
 24 and another one that ranges from, like, 0.5 to 3.5.
 25 Like it's -- when you standardize

Page 229

1 something, you make the distributions comparable by
 2 having standard deviation by definition being zero.
 3 If you divide by the standard deviation, the
 4 distribution of the standardized variable is going
 5 to have a standard deviation of one and a mean of
 6 zero. So you don't have to worry about what's
 7 called the location of the variable, which is the
 8 mean, and the variants of the variable because it's
 9 all standardized to zero and 1.
 10 Q. Got it.
 11 What was the dataset here that you were
 12 working with?
 13 A. This one -- the thing that I'm
 14 standardizing is quite an involved variable, which
 15 is -- it's described in equation 4 there -- where
 16 it's quite involved.
 17 What I would need to know to do that, to
 18 calculate that, is this -- first you would need to
 19 know this little A -- okay. So in order to -- to
 20 know this you'd have to go to equation 3, which
 21 tells you what this little A thing is.
 22 This little A thing is -- okay. And we're
 23 actually having to go to equation 2. I think.
 24 Q. Yeah, yeah, yeah. And I have to go back
 25 to -- yeah, yeah. Okay.

Page 230

1 A. Okay. So I don't want to waste your time
 2 here because it's going to be quite involved and I'm
 3 not sure it's related to --
 4 Q. Yeah, yeah, let me -- let me try to -- let
 5 me try to reframe my question.
 6 When -- the dataset that you were working
 7 with -- I think you say you -- you had three
 8 datasets; is that right? I'm -- I'm just trying to
 9 see what -- what was the -- what were the datasets
 10 that you were working with in this paper?
 11 A. Uh-huh. Umm, I believe that it might be
 12 in -- is that in the paper described? There's a
 13 Section III.A on page 1310 that talks about the data
 14 that I'm using.
 15 Q. Yep. Yep. Three sources of data.
 16 A. Yeah.
 17 Q. RUC's liberations. Yep.
 18 A. Yep. So there -- there's -- roughly
 19 speaking, I know each proposal -- this is about the
 20 pricing decisions that the RUC makes, or the pricing
 21 recommendations.
 22 And so for each CPT code that gets priced,
 23 I know who are the people that are on the proposal,
 24 so it -- it's a political process in some ways where
 25 if there's a CPT code that is done by cardiologists

Page 231

1 that needs to be priced, there will be a proposal
 2 that's written by cardiologists and maybe having
 3 other subspecialties or specialties on that
 4 proposals.
 5 So I'll know who are -- what are the
 6 identity of the specialties on that proposal, what
 7 are the identities of the specialties on this
 8 committee called the RUC. That's one dataset.
 9 The other dataset is using Medicare
 10 claims.
 11 And I believe -- is there a third dataset
 12 that is kind of using private sector prices. So
 13 that's not quite used in the equation that you
 14 highlighted. The equation that you highlighted uses
 15 the first two datasets.
 16 Q. Got it.
 17 But it sounds like -- I mean, you -- you
 18 have created some averages. You've used some
 19 standard -- you've standardized certain datasets.
 20 What other -- what other techniques did
 21 you use with this data?
 22 A. Yeah, I mean, so there are several, right.
 23 There's --
 24 Q. Yeah.
 25 A. If you look at equation 2, it's -- it's

Page 232

1 creating a share. It's -- it's summing up a number
 2 of quantities and dividing -- so there's a numerator
 3 which is part of the denominator so this is creating
 4 a fraction. And when you have the fractions, I'm
 5 creating a vector of fractions that's sum for one.
 6 That's equation 3.
 7 I'm calculating the Euclidean distance,
 8 which is the -- kind of the sum of squares and you
 9 take the square root of that and then once you have
 10 that, then I'm taking the maximum operator in
 11 equation 4 and then I'm taking an average of that.
 12 So an average does play a role in this but
 13 it's not the only operation that I'm doing here.
 14 Q. Right. Right.
 15 I mean, would you agree with me that --
 16 that you do use averages to arrive at a measure of
 17 central tendency in -- in your -- in your work?
 18 MR. STOY: Object to the form.
 19 THE WITNESS: Averages have a role here.
 20 But as I said earlier in the deposition, it really
 21 matters that you get the sample right. If you take
 22 an average of a different sample and try to apply
 23 that to another sample, that would be invalid.
 24 What I'm doing here is I'm describing --
 25 I'm not trying to say that this is a representative

Page 233

1 of some other sample that is not the same. I'm just
 2 describing the sample that I have. It's just a
 3 descriptive thing. I'm not saying that this should
 4 apply for something out of sample. This is just a
 5 description of the sample that I'm talking about.
 6 BY MR. MIGLIACCIO:
 7 Q. Is it fair to say that the use of averages
 8 to make sense of real world data and formulate
 9 useful parameters for policy decisions is a central
 10 tool of healthcare economics research?
 11 MR. STOY: Object to the form.
 12 THE WITNESS: Averages are useful but if
 13 you don't use them correctly, you could reach very
 14 misleading conclusions.
 15 BY MR. MIGLIACCIO:
 16 Q. So in this case, in this study, by
 17 definition, taking averages across datasets sets,
 18 they don't represent all data points exactly, right?
 19 An average doesn't represent every single data point
 20 exactly, it's an average; is that correct?
 21 A. By definition when you're calculating
 22 average you're losing information, yes.
 23 Q. That -- and that's the whole point of
 24 using an average, right?
 25 A. The point of using an average is most

<p style="text-align: right;">Page 234</p> <p>1 often to describe the dataset that you have -- to 2 describe the data that you have at hand. It becomes 3 dangerous when you use that to extrapolate to 4 another dataset that you don't have or to use -- to 5 extrapolate to another thing that you're interested 6 in that is different. That's kind of the point that 7 I'm trying to make. 8 Q. So I'm going to show you one more, one 9 more paper here. Let's see. This paper here -- 10 A. Oh. Let me just -- oh. 11 Q. Yeah, no, I'm -- I'm still -- I'm going to 12 ask you just a few more questions about this one. 13 A. Oh, okay. This is Exhibit 1 or Exhibit 7? 14 Q. This is still -- this is the same exhibit 15 we were just looking at, so -- 16 A. I just left it. Okay. So it's Exhibit 7. 17 Q. Exhibit 7, yes. Yep, yep, yep. Yep. 18 So this paper, is it -- 19 (Whereupon, a brief discussion off the 20 record.) 21 BY MR. MIGLIACCIO: 22 Q. Is it fair to say that this paper is 23 concordant with lots of other studies showing a 24 strong relationship between Medicare and commercial 25 prices?</p>	<p style="text-align: right;">Page 236</p> <p>1 the proposing specialty have higher affiliation 2 versus lower affiliation, you can see a big 3 difference in the slope here. Which means that the 4 relationship depends on that. 5 Second, is that I think for the purpose of 6 this case, we care not about kind of changes on 7 changes or the slope. We care about the levels. We 8 care about if private insurance is, say, 50 percent 9 higher or 20 percent higher or, you know, 10 percent 10 higher than -- than Medicare. So it's the exact 11 magnitude. 12 So even if we had something that was 13 exactly concordant, meaning if we increased the 14 price in Medicare by 5 percent, the private 15 insurance price would be increased by 5 percent. 16 The level matters a lot when we're coming 17 up with the price of the medical monitoring program 18 or the spending that would be involved in the 19 medical monitoring program because it could be 20 50 percent higher or it could be 20 percent higher 21 uniformly and that could be a big difference in how 22 much we decide to -- you know, how much we're saying 23 that the medical monitoring program has to -- is 24 going to cost. 25 So if you look at this graph on panel A,</p>
<p style="text-align: right;">Page 235</p> <p>1 MR. STROY: Object to the form. 2 MR. KUM: Madam Court Reporter, can you 3 read the question back to me. 4 (Whereupon, the reporter read the record 5 as follows: 6 "Question: Is it fair to say that this 7 paper is concordant with lots of other studies 8 showing a strong relationship between Medicare and 9 commercial prices?") 10 MR. KUM: Thank you. 11 THE WITNESS: So I think we have to be 12 precise about the relationship here. The figure 13 that talks about this relationship is in -- is 14 Figure 7 on page 1338. 15 And what it shows there is that it shows 16 various kind of slopes here. Which means that, 17 generally speaking, when you have a procedure that 18 has a higher price in Medicare, you're going to have 19 a procedure that has a higher price in private 20 insurance, okay. 21 But you can see that this slope differs 22 between different types of procedures. That's kind 23 of the main point of this figure, is that when a 24 procedure is priced by the RUC versus not or when 25 the procedure is priced in a case where the RUC and</p>	<p style="text-align: right;">Page 237</p> <p>1 for example, the scale on the Y axis goes from zero 2 to negative 4 logs. Whereas the scale on the X axis 3 goes from negative 6 to zero. That's huge in terms 4 of log terms. 5 Usually, when you talk about -- it's hard 6 to kind of interpret exactly, but when something is 7 0.5 logs higher that means it's generally 50 percent 8 higher. So if -- if you just look at the scale, the 9 scale tells you the private insurance is much more 10 generous than Medicare. And it could vary by a lot. 11 BY MR. MIGLIACCIO: 12 Q. Is it fair to say that in many situations, 13 notably when the RUC (verbatim) update committee, 14 the RUC, changes Medicare prices there is a 15 consistent and strong relationship between Medicare 16 prices and commercial insurer prices? 17 A. I think it depends. 18 Q. What does it depend on? 19 A. In this figure, what I'm showing you is 20 that it depends on the -- whether it comes from the 21 RUC. There are many price changes that don't come 22 from the RUC. And whether the RUC prices comes 23 from, like, a proposal process where the proposers 24 are more affiliated or less affiliated to the RUC. 25 And that's just one dimension in which it depends.</p>

<p style="text-align: right;">Page 238</p> <p>1 Q. Would you say it's fair that this paper 2 supports the use of Medicare as a way to predict or 3 estimate commercial prices, which may be -- 4 A. No. 5 Q. -- imperfect but does offer an important 6 methodology; in other words, if you know Medicare 7 prices, you could use the existing academic 8 literature to estimate where commercial prices might 9 fall? 10 A. I think it would be -- go ahead. 11 MR. STOY: Object. Object to the form of 12 the question. 13 Go ahead. 14 THE WITNESS: That's -- that's not -- it 15 would not be fair to say that. 16 BY MR. MIGLIACCIO: 17 Q. Why not? 18 A. It, again, depends on the purpose that 19 you're trying to use it for. If the purpose is to 20 estimate the spending that you would have for a 21 medical monitoring program you might be 50 percent 22 off or you might be a hundred percent off. 23 Q. I'm -- I'm not asking you about estimating 24 anything for a medical monitoring program. I'm 25 asking you -- this is an academic paper, right, this</p>	<p style="text-align: right;">Page 240</p> <p>1 A. The RUC recommends prices, then the 2 federal government decides whether to implement the 3 RUC's recommendations. 4 Q. Okay. How often -- so the RUC -- the 5 federal government decides and then what happens 6 after -- if the federal government decides to 7 implement them, then what -- what happens next? 8 A. Then it goes into the Medicare Physician 9 Fee Schedule. 10 Q. Got it. Got it. 11 Is it fair to say that your findings here 12 in this paper -- and I'm not asking you about the 13 medical monitoring at issue in this case -- but just 14 generally, you know, if the findings here provide 15 another data point to support the known relationship 16 between Medicare and commercial prices? 17 MR. STOY: Objection. Form and scope. 18 THE WITNESS: Can you restate the question 19 again? 20 BY MR. MIGLIACCIO: 21 Q. Yeah. 22 Is it fair to say that your findings here 23 in this paper generally provide another data point 24 to support the known relationship between Medicare 25 and commercial prices?</p>
<p style="text-align: right;">Page 239</p> <p>1 wasn't published for a particular purpose. I'm 2 asking if that's a fair reading of your conclusion. 3 A. Can you restate -- a fair reading -- 4 again? 5 Q. Yeah. 6 Is it fair to say in many situations, 7 notably, when the RUC changes prices, there is a 8 consistent and strong relationship between Medicare 9 prices and commercial insurer prices? 10 A. It's fair to say that when the RUC changes 11 prices, you will see changes in the same direction 12 in private insurance in general. This is talking 13 about changes on changes, not levels of prices. For 14 the medical monitoring program you would need levels 15 of prices, not just changes. 16 Q. The RUC sets the prices, though, does it 17 not? 18 A. It recommends prices in some cases. 19 Q. Okay. In some cases. 20 Didn't -- we just talked about that in 21 relation to your last paper, didn't we? 22 A. Correct. 23 Q. That it recommends prices and -- but 24 for deviation at times, which we haven't quantified, 25 those are the prices that are paid, right?</p>	<p style="text-align: right;">Page 241</p> <p>1 A. It's fair to say that this study supports 2 a relationship between Medicare and commercial 3 prices. 4 Q. Have other people recognized that 5 relationship? 6 A. Yes. 7 Q. Okay. Who -- who else has recognized that 8 relationship? 9 A. In the economic literature, I think the 10 paper that most people would cite to you is Clemens 11 and Gottlieb, which I believe I cite in this paper. 12 Q. Uh-huh. Tell me about that paper. Was 13 that peer-reviewed? 14 A. Yes. 15 Q. Was this -- was this paper peer-reviewed? 16 A. Yes. 17 Q. Is the Clemens and Gottlieb paper known to 18 be reliable? 19 A. You know, again, it depends on reliable 20 for what? 21 Q. For the conclusion that there is a 22 relationship, a known relationship between Medicare 23 and commercial prices? 24 A. Yes. 25 Q. Okay. And your paper here, is it reliable</p>

Page 242

1 for that conclusion as well?

2 A. My paper here is kind of -- adds

3 additional interpretation to that relationship.

4 Q. And is it reliable for that additional

5 interpretation?

6 A. I believe so.

7 Q. Who is Michael J. Dickstein?

8 A. He is a professor at NYU.

9 Q. And you were coauthors on this paper?

10 A. Correct.

11 Q. Did you receive any comments on it or that

12 you responded to? Was there any further

13 correspondence with respect to it?

14 A. In the same way that the --

15 (Technical difficulties.)

16 (Whereupon a brief discussion off the

17 record.)

18 THE WITNESS: Okay. I asked, in the same

19 way that the New England Journal paper had

20 correspondence?

21 BY MR. MIGLIACCIO:

22 Q. Yeah.

23 A. No.

24 Q. Okay.

25 MR. MIGLIACCIO: Why don't we -- I don't

Page 243

1 know how long we've been going but why don't we take

2 a quick five-minute break and go off the record.

3 THE VIDEOGRAPHER: Okay. We're off the

4 record at 2:51 p.m. Pacific time.

5 (Whereupon, a brief recess was taken.)

6 THE VIDEOGRAPHER: We are back on the

7 record at 3:03 p.m. Pacific time.

8 BY MR. MIGLIACCIO:

9 Q. Okay. All right.

10 Dr. Chan, just a few more questions before

11 I pass it to my colleague. Really about the

12 creation of your report.

13 Did you personally write the whole report?

14 A. I'm not sure what you mean by "personally

15 write," but yes, I did. I -- I wrote the -- the

16 entire report is mine, and I wrote the report.

17 Q. And with respect to the individuals that

18 helped you, did you screen them or vet them in any

19 fashion before you used their work?

20 A. I have a working relationship with

21 Analysis Group, and I did get to work with the

22 people that I mentioned on the call to a pretty

23 close extent. And I was able to evaluate the

24 quality of their work throughout as I prepared this

25 report.

Page 244

1 Q. Did you ever meet with any of them?

2 A. And what do you mean by "meet"?

3 Q. Like in person. I assume the answer would

4 be no, but I'm just curious.

5 A. Yes, the answer is -- is no. It was all

6 remote, by Zoom, by telephone.

7 Q. Did you vet the data that -- that was

8 provided to you? How -- you know, how did you

9 determine that the data that was provided to you was

10 accurate?

11 A. I did take a look at the data. I took a

12 look at the code that was used to produce the -- so

13 the -- basically the analytical process, which is

14 the raw data, the code, and the outputs and whether

15 the -- the outputs were consistent with my clinical

16 expertise and my knowledge of health policy.

17 So I evaluated the entire analytical

18 process from being aware of how the raw data looked

19 like, being aware of the analyses that were used to

20 process the data, and the outputs.

21 Q. Did you -- have you been paid yet for --

22 for your time?

23 A. I'm not sure if I've been paid for the

24 invoice that I submitted in January -- or, sorry,

25 for December. That would be the only time that it

Page 245

1 would be paid because I have not submitted invoices

2 for January or February.

3 Q. All right. When you do get paid, do you

4 get paid your rate plus the attribution at the same

5 time?

6 A. It's not always the same time. I think

7 it's usually separate, if I -- if I remember

8 correctly.

9 Q. How's -- how is it separate?

10 A. I believe there are -- there's payment for

11 my time.

12 Q. Uh-huh.

13 A. As a deposit or a check. I think in this

14 case, it's a deposit. And there is a separate

15 payment for the attribution.

16 Q. Got it.

17 And -- but are those made like

18 contemporaneously, is I guess what I'm asking?

19 A. Not necessarily. I think usually not.

20 Q. How -- do you know when you would be paid

21 for the attribution?

22 A. Not really. It's kind of random. I don't

23 quite understand the -- when the payments get made.

24 Q. You get them at some point after you get

25 the -- your payments?

<p style="text-align: right;">Page 246</p> <p>1 A. Potentially. It's not always after. I 2 don't understand the timing. 3 Q. Got it. Okay. 4 MR. MIGLIACCIO: Well, look, I thank you, 5 you know, for your time, and I want to pass the 6 question -- questions over to Layne. 7 THE WITNESS: Thank you very much. Thank 8 you. 9 EXAMINATION 10 BY MS. HILTON: 11 Q. Good afternoon, Doctor. My name is Layne 12 Hilton and I am an attorney for the plaintiffs and 13 I'm going to be asking you about the portions of 14 your report that pertain to Dr. Conti's analysis. 15 Do you have an understanding of what the 16 term "medical benefit" means? 17 A. I have an understanding of what it means 18 to me. I'm not sure if it's a technical term, but 19 it -- to me it -- I do have an interpretation of 20 that term. 21 Q. If I were to use the term "medical 22 benefit" to describe the activities of a commercial 23 health insurance plan that pertain to things like 24 doctors' appointments and tests and other sorts 25 of -- you know, all of the things that you basically</p>	<p style="text-align: right;">Page 248</p> <p>1 you, without you having to specify which cases, if 2 in any of your previous expert testimony you 3 provided testimony about the pharmacy benefit. 4 A. Yes. 5 Q. And what aspects of the pharmacy benefit 6 have you previously testified about? 7 A. I'm not sure what I can disclose other 8 than that I have testified on the structure of 9 pharmacy benefits in the healthcare landscape. 10 Q. And are you -- are you referring to the 11 tiering structure of formularies? 12 A. That's part of it. 13 Q. Have you previously testified about the 14 pharmacy benefit as it relates to generic drugs? 15 A. Some of my previous testimony does bear on 16 generics. 17 Q. What aspects of the generic drug pharmacy 18 benefit have you previously testified about? 19 A. I'm not sure if I could specify other than 20 that generic drugs are covered under pharmacy 21 benefits. Sometimes pharmacy benefits will favor 22 one drug or another. Cost considerations and 23 efficacy are some considerations. 24 Q. Have you ever previously provided 25 testimony about the economic value of certain</p>
<p style="text-align: right;">Page 247</p> <p>1 have been discussing with my colleague all day, 2 would that be accurate that all of those activities 3 would fall under something called a medical benefit 4 of a commercial health insurance? 5 A. So you're referring to benefits of a 6 commercial -- of a -- of a health insurance plan; is 7 that right? 8 Q. Yes, I am. 9 A. Okay. That makes sense. 10 Q. And -- and so would you understand all of 11 those activities that you have been discussing all 12 day to be activities that fall under the medical 13 benefit of a commercial health insurance plan? 14 A. Correct. 15 Q. What is your understanding, then, of the 16 pharmacy benefit associated with a commercial health 17 insurance plan? 18 A. So whereas medical benefit reimburses 19 care -- medical care, including such as office 20 visits or other medical services that are provided, 21 a pharmacy benefit would reimburse the cost of 22 drugs. 23 Q. Now, I understand from your discussions 24 earlier today that you have provided expert 25 testimony in a variety of cases. I'm going to ask</p>	<p style="text-align: right;">Page 249</p> <p>1 generic prescription drugs to consumers? 2 A. No. 3 Q. Have you ever previously testified about 4 the economic value of certain generic prescription 5 drugs to third party payors? 6 A. I haven't testified on that, no. 7 Q. Have you ever provided any testimony about 8 the costs of generic prescription drugs paid by 9 consumers at the pharmacy point of sale? 10 A. I have not testified on that. 11 Q. Have you ever previously testified about 12 the costs of generic prescription drugs paid by 13 third party payors at the pharmacy point of sale? 14 A. I'm not sure. 15 Q. Have you ever provided any testimony about 16 the generic drug approval process? 17 A. Not directly. It may have been touched 18 upon in the context of discussing generic drugs. 19 Q. Have you ever provided any direct 20 testimony about the food and drug cosmetics act? 21 A. No. 22 Q. Have you ever provided any direct 23 testimony about the Drug Supply Chain Security Act? 24 A. No. 25 Q. In your academic life, as it were, have</p>

Page 250

1 you ever conducted any research on the food and drug
2 cosmetics act?
3 A. No.
4 Q. Have you ever conducted any research on
5 the Drug Supply Chain Security Act?
6 A. No.
7 Q. Have you ever worked on any FDA task
8 forces related to the approval and regulation of
9 generic prescription drug products?
10 A. No.
11 Q. Have you ever worked as an advisor to the
12 FDA's Office of Generic Drugs?
13 A. Not in that office, no.
14 Q. Which office with the FDA have you worked
15 for?
16 A. I believe that is in -- on my CV. Under
17 Other Professional Positions on page A-2.
18 Q. Yes, I see it.
19 It looks like you worked for the Center
20 for Devices and Radiological Health?
21 A. Yes.
22 Q. And also, you worked in the -- as the --
23 in the White House Office of Science and Technology
24 Policy; is that right?
25 A. In the office of planning and analysis at

Page 251

1 the Center for Drug Evaluation and Research.
2 Q. Great.
3 In the context of your work as a staff
4 fellow with the office of planning and analysis for
5 CDER, as I will shorten it to get us through this,
6 what -- what sort of activities did you engage in?
7 A. In various policy analyses I worked with a
8 group of economists, mostly, who were in this
9 office. I -- some of the issues that we analyzed
10 were ways to surveil for potential drug side effects
11 and potential safety -- kind of prescription drug
12 safety programs to -- to ensure that the drugs were
13 being safely used.
14 Q. Did any of this work relate to potentially
15 counterfeit or illegitimate drugs?
16 A. No.
17 Q. Did any of this work with the FDA relate
18 to potentially adulterated or misbranded drugs?
19 A. No.
20 Q. Throughout your report, you use the term
21 "affected valsartan."
22 In your own words, how do you define
23 "affected valsartan"?
24 A. I believe that's in paragraph 11 of my
25 report, "valsartan products that were recalled due

Page 252

1 to possible nitrosamine impurity."
2 Q. So your term "affected valsartan" only
3 relates to the valsartan products which were
4 recalled; is that right?
5 A. Which were eventually recalled, I believe.
6 I think that any valsartan -- valsartan that had the
7 possibility of a nitrosamine impurity -- again, I'm
8 not a -- I haven't read so much on the -- on the
9 exact sequence of events here, but I believe that
10 valsartan products that had the potential for
11 nitrosamine impurities were eventually recalled.
12 Q. Are you aware that there were valsartan
13 products manufactured by the defendants in this
14 litigation that had expired by the time of the
15 recall and therefore were not part of the scope of
16 the recall?
17 A. I'm not aware of that. That wasn't
18 something that I looked into in great detail.
19 Q. So your report makes no opinion or takes
20 no opinion about products manufactured by the
21 defendants which were expired and never recalled by
22 the FDA; is that right?
23 MR. STOY: Object to the form.
24 Mischaracterizes testimony.
25 THE WITNESS: Can you say that again?

Page 253

1 BY MS. HILTON:
2 Q. Sure. It's a confusing question.
3 Does -- do you -- do you have any opinion
4 about valsartan products that were manufactured by
5 the defendants but which expired before the FDA's
6 recall?
7 A. Were these products ever used by patients?
8 Q. They were.
9 A. What do you mean by "expired"? So they
10 were -- they -- they were expired in the patients'
11 hands or they were prescribed to patients after they
12 had expired?
13 Q. So as I understand it, for some period of
14 time between 2012 and let's call it 2016 or 2017,
15 there were many valsartan products that bore unique
16 NDC codes that were dispensed to patients at the
17 point of sale that were manufactured by the
18 defendants in this litigation.
19 At the time of the FDA recall, many of
20 these products had expired and had already been
21 consumed by the patients and therefore, were not
22 within the scope of the FDA's recall list.
23 And so my question is -- you know, and
24 perhaps I can ask it a different way.
25 Did you expand your analysis to include

Page 254

1 those products which were not a part of the FDA's
 2 recall list but were nevertheless manufactured by
 3 the defendants, you know, from 2012 until 2018?
 4 A. So these include drugs that were actually
 5 consumed by consumers before the recall, before it
 6 was known that nitrosamine -- before that -- before
 7 nitrosamine impurities were known; is that right?
 8 Q. Correct.
 9 A. I believe I do consider those drugs.
 10 Q. And how did you identify the NDC codes
 11 associated with those drugs?
 12 A. I believe the NDC codes are linked to the
 13 manufacturer of the drugs. So we would look for
 14 valsartan -- we have a list of -- in my report I
 15 believe I do describe how we identified the NDC
 16 codes.
 17 So for -- this is kind of looking at
 18 footnote 23.
 19 It says, "For my analyses in this report,
 20 I used the list of NDC's identified as recalled on
 21 the FDA's website to determine 'affected valsartan'
 22 products."
 23 So these are -- this is something I'll
 24 have to think about whether the NDC codes -- so the
 25 NDC codes are specific for a manufacturer of a -- of

Page 255

1 this -- of this -- a manufacturer and a molecule
 2 and -- so these are drugs that were eventually
 3 recalled but even -- but these NDC codes would have
 4 existed before the recall.
 5 Q. Correct. And -- and this was actually an
 6 attachment to Dr. Conti's report. I was -- I guess
 7 I was trying to determine if you used the same NDC
 8 list that was used by Dr. Conti in her report or if
 9 you used a different list. It looks here like
 10 instead you used the FDA recall list; is that right?
 11 A. To the best of my understanding right now,
 12 yes, but we could check the two lists to -- to -- to
 13 figure out whether they're the same or how they
 14 differ.
 15 Q. Thank you.
 16 For the purposes of your report related to
 17 Dr. Conti, did counsel ask you to make any
 18 assumptions in drafting this report?
 19 A. Not to my knowledge.
 20 Q. So counsel did not ask you to assume that
 21 the affected valsartan was considered adulterated by
 22 the FDA?
 23 MR. STOY: Object to the form. Calls for
 24 a legal conclusion.
 25 THE WITNESS: I'm not sure if that

Page 256

1 assumption is required. I know I considered that
 2 possibility, that affected valsartan contained
 3 nitrosamine impurities and that there is even a
 4 possibility of cancer risk due to these impurities.
 5 BY MR. MIGLIACCIO:
 6 Q. So you assume that the affected valsartan
 7 contains nitrosamine impurities and that there was a
 8 possible cancer risk due to those impurities?
 9 MR. STOY: Objection. Mischaracterizes
 10 his testimony.
 11 THE WITNESS: I considered the possibility
 12 that affected valsartan contained nitrosamine
 13 impurities that could increase the risk of cancer
 14 for some patients.
 15 BY MR. MIGLIACCIO:
 16 Q. You didn't assume that the affected
 17 valsartan was considered adulterated by the FDA?
 18 MR. STOY: Asked -- asked and answered.
 19 THE WITNESS: Can you restate that
 20 question?
 21 BY MS. HILTON:
 22 Q. I'll ask it a little bit more clearly.
 23 Did you assume that the affected valsartan
 24 was considered adulterated by the FDA?
 25 MR. STOY: Objection. Asked and answered.

Page 257

1 THE WITNESS: I did consider -- you can
 2 see in my report that the FDA -- the actions of the
 3 FDA are considered in my report but they're not
 4 central to my opinion of the value of valsartan.
 5 BY MS. HILTON:
 6 Q. And looking at your report, you actually
 7 never use the term "adulterated"; is that fair to
 8 say?
 9 A. I believe I have -- I don't use that term.
 10 I say valsartan with impurities. I am not an expert
 11 to tell the difference between the term of
 12 "impurity" versus "adulterated."
 13 Q. So you're not providing any expert
 14 testimony about adulteration generally; is that fair
 15 to say?
 16 A. Adulteration versus impurity, I don't know
 17 any difference between the words.
 18 Q. For the purposes of your report, did you
 19 assume that the affected valsartan was manufactured
 20 in compliance with all regulations, including
 21 Current Good Manufacturing Practices?
 22 A. Can you ask that question again?
 23 Q. Sure.
 24 For the purposes of your report, did you
 25 assume that the affected valsartan was manufactured

<p style="text-align: right;">Page 258</p> <p>1 in compliance with all regulations, including 2 Current Good Manufacturing Practices? 3 A. I don't think so. And I don't think that 4 assumption is necessary for my opinions. 5 Q. Why don't you think that assumption was 6 necessary for your analysis of Dr. Conti's report? 7 A. Because for the claim of worth -- the 8 worth of valsartan, I am considering what does that 9 valsartan do. I -- I'm considering the benefits of 10 valsartan in terms of blood pressure control and in 11 terms of treating heart failure. And I'm 12 considering the possibility of a cancer risk. 13 Whether the valsartan was manufactured in 14 a certain way and whether it met certain 15 regulations, whether supply was allowed by the FDA 16 or not, that is not something that I considered 17 relevant for the assessment of worth. 18 Q. You are aware, however, that Dr. Conti's 19 value and opinion about the value of the affected 20 valsartan hinges upon the fact that the valsartan 21 was considered adulterated because it was 22 manufactured in a way that did not comply with 23 Current Good Manufacturing Practices, correct? 24 A. I'm aware of her opinion on that, yes. 25 Q. So no aspect of your particular report</p>	<p style="text-align: right;">Page 260</p> <p>1 affirmatively. 2 Are you offering any opinions about the 3 pharmacy benefit structures and the cost paid by 4 consumers or TPPs at the point of sale for affected 5 valsartan? 6 A. That information is not central to my 7 opinion. Although the idea of costs and revenues 8 and profits to various parties is something within 9 economic -- my economic expertise. 10 Q. But you're not offering any of those 11 opinions in this report for this purpose today? 12 A. Correct. 13 Q. Right? 14 A. Correct. 15 Q. In your -- are you offering any opinions 16 on a drug manufacturer's obligation to comply with 17 Current Good Manufacturing Practices? 18 A. No. 19 Q. Are you offering any opinions on contracts 20 which may impact the amount paid for affected by -- 21 for affected valsartan by any TPP? 22 A. No. 23 Q. I would like to talk to you about getting 24 into the context of a report which I believe was 25 previously marked as Exhibit 2.</p>
<p style="text-align: right;">Page 259</p> <p>1 directly addresses that opinion; is that fair to 2 say? 3 MR. STOY: Object to the form. 4 THE WITNESS: I think it's fair to say 5 that I don't agree with that framework of assessing 6 value. 7 BY MS. HILTON: 8 Q. Before we get into your proposed framework 9 of value, let's make sure that I understand the sort 10 of limitations of your opinion as it relates to the 11 economic value of the prescription drugs. 12 You're not offering any opinions about the 13 data sources used by Dr. Conti in her calculation of 14 damages, correct? 15 A. I'm not commenting on the data sources 16 because my primary opinion is at odds with her 17 framework. 18 Q. You're likewise not offering any opinions 19 on pharmacy benefit structures and the cost paid by 20 consumers or TPPs at the point of sale for the 21 affected valsartan that was dispensed at the 22 pharmacy, correct? 23 A. Can you restate that? 24 Q. Sure. 25 Are you offering -- I'll put it more</p>	<p style="text-align: right;">Page 261</p> <p>1 A. Uh-huh. 2 Q. I'd like to talk to you about 3 paragraph 133 of your report, if you'd like to flip 4 there. 5 A. Okay. 6 Q. And in this paragraph you are discussing 7 the -- let's call it supply and demand framework of 8 Dr. Conti's opinion. 9 A. Uh-huh. 10 Q. And you write, starting in the middle of 11 that paragraph, "The implementation of her approach 12 relies on faulty reasoning. Dr. Conti asserts that 13 'according to economic theory, for a consumer 14 product to have economic value, demand for the 15 product must exist and supply must be allowed to 16 meet demand.' However, the demand curve alone 17 speaks to a product's economic value and is based on 18 each patient's and TPP's willingness to pay for a 19 drug." 20 Do you see that? 21 A. Yes. 22 Q. And then to support that economic theory 23 you cite to a -- let's call it a -- a chapter or a 24 textbook or some sort of treatise; is that right? 25 A. Yes.</p>

<p style="text-align: right;">Page 262</p> <p>1 MS. HILTON: I am going to mark for the 2 record --and which -- what exhibit are we on? 3 THE WITNESS: 7. 4 MS. HILTON: Yeah. Exhibit 8, I think. 5 THE WITNESS: Okay. 6 MS. HILTON: I am going to mark as 7 Exhibit 8 this citation footnote 252. 8 (Whereupon, Chan Exhibit 8 was marked for 9 identification.) 10 BY MS. HILTON: 11 Q. Okay. Let me know when you have Exhibit 8 12 up. 13 A. Yep. 14 Q. Can you tell me what particular section of 15 this chapter you were using to support your opinion 16 that the demand curve alone speaks to a 17 pharmaceutical product's economic value and is based 18 on a patient/TPP's willingness to pay for a drug? 19 A. Okay. So in these pages, there is no 20 supply curve. What we call consumer surplus is very 21 closely related to the economic value. Consumer 22 surplus is the demand curve that lies above the 23 price. 24 Q. Do you -- does this particular chapter 25 relate to pharmaceutical drug products?</p>	<p style="text-align: right;">Page 264</p> <p>1 That's irrelevant. It's only relevant in so far as 2 it affects consumer surplus or the demand curve. It 3 doesn't depend on a supply curve. 4 Q. If we look at the second page of this 5 particular PDF, it says, "To calculate the aggregate 6 consumer surplus in a market," does that not 7 indicate that there must be the product on the 8 market? 9 A. You can also talk about consumer surplus 10 for a good that doesn't yet exist. It does not 11 presuppose that there must be a market for it. It 12 happens to say in the market, but that's not a 13 requirement. 14 Q. Where in this particular chapter does it 15 indicate that it is not a requirement of the product 16 at issue for consumer surplus must not be in the 17 market? 18 A. In this chapter there is no mention of a 19 supply curve. 20 Q. So that is the basis for your statement -- 21 A. It doesn't require a supply curve. 22 Usually we do have a market and that's why this is 23 kind of the usual setting but when you're talking 24 about willingness to pay and when you're talking 25 about utility you don't need a market.</p>
<p style="text-align: right;">Page 263</p> <p>1 A. This is an economic -- an economics 2 textbook which is quite general when we talk about 3 demand curves and supply curves. This particular 4 chapter uses a very -- it uses any -- it uses just a 5 random example of rock concert tickets but the focus 6 is not about rock concert tickets. 7 Q. Does this chapter in the discussion of the 8 consumer surplus presuppose that all of the items 9 that are subject to this consumer surplus analysis 10 are items that can legally be on the market? 11 A. There's no presupposition of that. 12 Q. So this would relate to anything, even 13 products that are illegal to sell on the market? 14 A. It could have been illegal rock concert 15 tickets or it could be -- 16 Q. I'm sorry. 17 A. -- or -- go ahead. 18 Q. No, continue. 19 A. They could have been illegal tickets. 20 Q. Where does it say that it -- that the 21 tickets could have been illegal? 22 A. It doesn't say it in the text, but if you 23 were to ask any economist -- well, I guess maybe if 24 you were to many economists -- Dr. Conti's an 25 economist -- it does not presuppose the legality.</p>	<p style="text-align: right;">Page 265</p> <p>1 Q. Would you agree that the market for 2 concert tickets is very different than the highly 3 regulated market of prescription drugs? 4 A. Yes, but this chapter is not about concert 5 tickets. This chapter is a general economic 6 textbook on economics, on microeconomics, and this 7 chapter is about consumer surplus which applies to 8 both concert tickets and prescription drugs. 9 Q. If we look at the next sentence of 10 paragraph 133 you go on to write -- I think this is 11 what you were alluding to before -- that sometimes 12 there could be a value for a product that is not yet 13 on the market. 14 You write, "Consider a pill that cures 15 cancer, there is no supply for such a pill as one 16 has not been invented yet, but it is certainly 17 possible to consider the patient and TPP's 18 willingness to pay for such a pill and the inherent 19 economic value such an innovation would provide." 20 Do you see that? 21 A. Yes. 22 Q. In this particular example of the 23 hypothetical pill that cures cancer, are you 24 assuming that the pill at issue has been 25 manufactured in compliance with good manufacturing</p>

Page 266

1 practices?
 2 A. No.
 3 Q. So it is your opinion that consumers and
 4 TPPs would be willing to pay for a pill that has not
 5 been manufactured in compliance with good
 6 manufacturing practices and could not assure that
 7 it's safe?
 8 A. I think it's certainly possible.
 9 Q. You don't have any evidence to associate
 10 that, correct?
 11 A. I think it's -- I would say it's common
 12 sense. You are pay -- you are willing to pay for
 13 the benefits of a good. If there is some
 14 uncertainty about the benefits of the good, that's
 15 why things like, you know, good manufacturing
 16 processes, that's why those might be valuable, but
 17 if -- in this hypothetical world where we already
 18 knew that this pill would cure cancer, we wouldn't
 19 have to know whether it was manufactured under good
 20 manufacturing practices.
 21 Q. Do you believe that generic drug products
 22 that are manufactured in such a way that the product
 23 contains glass are valuable?
 24 A. That's a hypothetical question. I think
 25 it would depend on the circumstance.

Page 267

1 Q. Are you -- have you ever heard of a
 2 generic drug manufacturer named Ranbaxy?
 3 A. Can you restate that question?
 4 Q. Have you ever heard of a generic drug
 5 manufacturer named Ranbaxy?
 6 A. I might have. I don't recall right now.
 7 Q. If I were to tell you that Ranbaxy
 8 manufactured generic products that contained
 9 glass --
 10 MR. STOY: Are you --
 11 (Whereupon, a brief discussion off the
 12 record.)
 13 BY MS. HILTON:
 14 Q. If I were to tell you that Ranbaxy
 15 manufactured generic products that contained glass
 16 and that this -- that these products had to be
 17 recalled from the market, would it be your position
 18 that these glass-contaminated generic products had
 19 value?
 20 A. I don't know enough about this situation
 21 to say anything. It's possible that they could
 22 still have value, but I don't know enough.
 23 Q. What would you need to know in order to
 24 assess whether the drug had value or didn't have
 25 value?

Page 268

1 A. I would need to know the medical benefits
 2 of taking that drug and the medical harms of taking
 3 that drug.
 4 Q. Do you agree with Dr. Conti's conclusion
 5 that there exists substantial asymmetry of
 6 information about the safety and quality of
 7 prescription drugs between the manufacturers of
 8 those drugs and the patients who purchase and
 9 consume those drugs?
 10 MR. STOY: I'll object to the extent it's
 11 beyond the scope of Dr. Chan's analysis.
 12 But you can answer.
 13 THE WITNESS: I don't have a particular
 14 opinion on that. I think it's possible. But I
 15 think it might depend.
 16 BY MS. HILTON:
 17 Q. What would it depend on?
 18 A. Depends on what the product is. It
 19 depends on -- so you -- can -- can you just restate
 20 the question? It's asymmetric information between
 21 the manufacturers of a drug and -- and who else?
 22 Q. And the patients who purchase and consume
 23 those drugs.
 24 MR. STOY: Same objection.
 25 THE WITNESS: It really depend -- I mean,

Page 269

1 there are different types of asymmetric information,
 2 right, the patient may have more information about
 3 their medical condition than the manufacturer. The
 4 manufacturer might have more information about how
 5 they manufactured the drug. So the information is
 6 not symmetric in different ways.
 7 BY MS. HILTON:
 8 Q. Is that a topic of upon which you'll opine
 9 in your report?
 10 A. I don't believe that's a central -- that's
 11 a central element required for my opinions in the
 12 report. I think ultimately, at the end of the day,
 13 the value of a drug is the medical benefit weighed
 14 against any harms of the drug.
 15 Q. You describe that -- in the body of your
 16 report that in order, as you see it, to calculate
 17 the economic value of a product to a particular
 18 plaintiff or patient, you would need to know
 19 something you describe as the ex-ante value as well
 20 as the ex-post value; is that right?
 21 A. In my report, I describe ex-ante value and
 22 ex-post value. I just -- I describe that because
 23 there are different concepts. There are different
 24 concepts of value. It depends on when you're asking
 25 about value.

Page 270

1 And this is particularly important when
 2 there's uncertainty about what actually is in the
 3 drug. Even before we knew that there might be
 4 impurities in the valsartan drug, there is still an
 5 ex-ante value that could account for the possibility
 6 of this impurity. And then after we find out about
 7 the possibility of impurity in some of the lots, the
 8 value of the drug could be updated in ex-post way.
 9 Q. You -- you testified that there was the --
 10 that it was possible somebody might know about the
 11 impurity at the time that they purchased the drug
 12 and that would be a part of its ex-ante value?
 13 A. They might know about a possibility of
 14 impurity.
 15 Q. What evidence did you review in this case
 16 that demonstrated that any one particular patient
 17 had any inkling that their valsartan might contain
 18 carcinogens?
 19 A. So as one consideration -- one piece of
 20 evidence that I -- I mention in the report is that
 21 at one point we did know about impurities in
 22 valsartan and the FDA recommended patients to
 23 continue taking their valsartan. That's one
 24 specific -- that's one specific instance about --
 25 about impurities specifically related to

Page 271

1 nitrosamines.
 2 But my earlier statement was about the
 3 general possibility that we may discover something
 4 about a drug that we didn't know. When you purchase
 5 something, there's not a hundred percent certainty
 6 about what that thing is in general. And you may
 7 discover something that nobody else -- nobody knew
 8 about this thing that you purchased and it could
 9 include the possibility of impurities in general.
 10 Q. I want to talk a little about your first
 11 statement that the FDA made a statement that people
 12 should continue to take their valsartan drugs.
 13 You're aware that that statement was made
 14 in August 2018, correct?
 15 A. Correct.
 16 Q. So at that point, all of the -- or most of
 17 the manufacturers and the defendants in this case
 18 had already recalled all of their product off the
 19 market at the time that the FDA made this statement,
 20 right?
 21 MR. STOY: Object to the form.
 22 THE WITNESS: I don't know the timeline.
 23 Can you -- can you say that again?
 24 BY MS. HILTON:
 25 Q. Yeah.

Page 272

1 As of August 2018, at the time that the
 2 FDA made the statement you just referred to about
 3 the possibility of nitrosamine contamination, many
 4 of the defendants had started recalling all of their
 5 products off the market; isn't that right?
 6 A. I don't know all the details but if what
 7 you just said is true, then some of them did not
 8 recall just yet.
 9 Q. But regardless, what the FDA said about
 10 the drugs in August of 2018 would have no bearing
 11 whatsoever on the ex-ante value of a drug purchased
 12 from 2012 until June of 2018, right?
 13 A. That statement would have bearing for
 14 people who purchased the drug after the statement.
 15 Q. So would not relate to any of the
 16 purchases prior to August of 2018?
 17 A. I think it still relates to whether people
 18 would purchase before that time in the sense that
 19 that statement is talking about potential value.
 20 It's talking about the medical benefits of taking
 21 that drug and that would be in the consideration of
 22 people who purchased it before.
 23 What I was saying in the second part of my
 24 response about the possibility of impurities is that
 25 there's always the possibility that something --

Page 273

1 there might be something about that drug that you
 2 don't know just yet and that's what I'm calling the
 3 ex-ante value.
 4 Q. How does your opinion regarding the
 5 ex-ante value of the affected valsartan change in
 6 light of the fact that there was valsartan on the
 7 market that did not contain nitrosamines?
 8 A. I did consider that.
 9 Q. How did you consider that?
 10 A. So when you're talking about a demand
 11 curve, the demand curve incorporates other products
 12 that are already in the market.
 13 Q. So is the ex-ante value of a valsartan
 14 that did not contain nitrosamine manufactured by a
 15 manufacturer that is not a defendant in this case
 16 different than the ex-ante value of the affected
 17 valsartan?
 18 A. Can you say that again?
 19 Q. Is the ex-ante value of the uncontaminated
 20 valsartan manufactured by manufacturers who are not
 21 defendants in this case different than the ex-ante
 22 value of the affected valsartan at issue in this
 23 litigation?
 24 A. And by ex-ante you mean before we knew
 25 which manufacturers were associated with affected

Page 274

1 valsartan; is that right?

2 Q. Correct.

3 A. I can't say whether they're exactly the

4 same. They could still differ. I don't know the

5 other considerations that might differentiate

6 different manufacturers before it was known which

7 ones were linked to affected valsartan.

8 Q. In your discussion of the ex-ante value of

9 affected valsartan, you delineated a list of factors

10 that you would look at to determine the value; is

11 that right?

12 A. Can you point me to the paragraph that

13 you're talking about?

14 Q. Sure.

15 134.

16 A. Uh-huh.

17 Q. From an economics perspective, how would

18 you go about incorporating these values and these

19 factors in a calculation to determine a prescription

20 drug's ex-ante value?

21 A. That is not a core -- that's not a core

22 analysis that I did in this report, although I talk

23 about it. The core opinion of this report is

24 whether we can say that affected valsartan is

25 worthless.

Page 275

1 Q. So you have no opinion whatsoever on how

2 to actually go about calculating the ex-ante value

3 of the affected valsartan; is that right?

4 A. I have some ideas --

5 MR. STOY: Objection to form.

6 THE WITNESS: -- but I don't know if

7 they're kind of -- if they're thought through at the

8 proper level that I would be willing to offer them

9 at this deposition.

10 BY MS. HILTON:

11 Q. Have you ever conducted a mathematical

12 calculation of a generic prescription drug product's

13 ex-ante value before?

14 A. I personally have not but I think that

15 there are several ways in which you could address

16 this.

17 Q. What are those ways?

18 A. So without having thought in great detail

19 for this deposition, there are ways to value what

20 consumers -- value consumers' utility in terms of

21 different health outcomes. It would -- you can

22 incorporate the value of getting cancer with the

23 value of controlling hypertension. The value of

24 treating heart failure. There are methods to value

25 those things and if -- that's one way to kind of --

Page 276

1 to perhaps to get at these ex-ante values

2 incorporating any uncertainty.

3 There are possibly other ways to do this

4 that I haven't thought to to the level of detail

5 that I think it would require for this deposition.

6 Q. Have you ever read any literature about

7 conducting the mathematical calculation for the

8 ex-ante value of a generic prescription drug?

9 A. I'm aware of literature that -- that uses

10 the approach that I just described to you. And that

11 approach could be applied to the value of a generic

12 prescription drugs.

13 Q. Is that literature cited in your report?

14 A. That's -- it's possibly cited in my

15 report. I can't recall. This is not a -- as I

16 said, my report primarily addresses the claim of

17 whether valsartan is worthless, not how one would

18 conduct an economic evaluation of the worth.

19 Q. Well, you, yourself, have never actually

20 endeavored to conduct such a calculation or

21 evaluation of a generic prescription drug's ex-ante

22 value, correct?

23 A. Specifically --

24 MR. STOY: Asked and answered.

25 THE WITNESS: Go ahead, Frank.

Page 277

1 MR. STOY: I just objected to asked and

2 answered.

3 You can go ahead.

4 THE WITNESS: That's a very specific

5 question that you asked, whether I endeavored to

6 calculate the ex-ante value before an information

7 revelation of a generic prescription drug.

8 It's hard for me to kind of answer whether

9 I have done cost-effectiveness analyses for analyses

10 of patient utility that could bear on that exact

11 specific question, but I have done economic analyses

12 that value different patient health outcomes and

13 weighed them against each other.

14 BY MS. HILTON:

15 Q. So the answer is no, you haven't conducted

16 a mathematical calculation to determine the ex-ante

17 value of a prescription generic drug; is that right?

18 A. It's possible that I have. I just can't

19 remember.

20 Q. After determining the ex-ante value of a

21 prescription drug, you write that in order to figure

22 out the -- I guess the injury to a particular

23 plaintiff you have to then ascertain the ex-post

24 value of that product.

25 What is your definition of ex-post value?

<p style="text-align: right;">Page 278</p> <p>1 A. What I refer to here as ex-post value is 2 the value that you have after the information 3 revelation. 4 But I think it's important to note that 5 there are many different steps of information 6 revelation that could be possible. 7 There is information revelation that you 8 consumed a drug that could contain nitrosamines. 9 And there's further revelation of you may know 10 whether or not you had a lot that had nitrosamines 11 in it. And then ultimately you would need to know 12 whether you suffered cancer as a result of 13 nitrosamines. That could be an event later down the 14 road. There are many different kind of points in 15 the timeline at which you might have different 16 values. 17 Q. So is it fair to say there's no real 18 concrete way to actually calculate a -- the effect 19 of valsartan's ex-post value? 20 A. No, it's not fair to say that. 21 Q. Why not? 22 A. There is a framework that you could 23 undertake -- and this is not something that I -- 24 again, the key point of my report is that I'm 25 rejecting the idea that anybody who consumed</p>	<p style="text-align: right;">Page 280</p> <p>1 actually have knowledge of that risk? 2 A. No. 3 Q. Why not? 4 A. A risk aversion does not require knowledge 5 of risk. It tells you what -- what is the expected 6 utility of somebody given uncertainty in the future 7 and this person could have many different 8 realizations of whether they get something that's 9 an -- like an -- what would be called a negative 10 shock to their utility versus a positive shock to 11 their utility. 12 All they need to know in order to 13 calculate risk aversion is how that person's utility 14 varies across different states of the world. 15 Q. So your testimony is that risk aversion 16 and the idea of risk does not require a person to 17 actually have knowledge of the risk; is that right? 18 A. To measure risk aversion you don't need -- 19 you don't -- you don't need to know the person's 20 knowledge. It does not require a person's knowledge 21 of the risk to measure risk aversion. 22 In order to calculate somebody expected 23 value -- expected willingness to pay at a given 24 point in time you would need to know what are the 25 possible states of the world in the future and you</p>
<p style="text-align: right;">Page 279</p> <p>1 affected valsartan had a value of zero. That is the 2 key point that I'm saying. 3 But if you needed to calculate exactly 4 what somebody's ex-post value would be, as I 5 mentioned, there are methods to use health outcomes 6 and methods to incorporate uncertainty to arrive at 7 a willingness to pay. 8 Q. Have you ever conducted a mathematical 9 calculation of a generic drug's ex-post value? 10 A. I think my answer would be similar to your 11 question about whether I've conducted a mathematical 12 analysis to calculate the ex-ante value of a drug. 13 It's possible that I have. I can't really comment 14 at this point. The methods that you would use to do 15 such a thing I have done. 16 Q. If we look at the second-to-last sentence 17 in paragraph 137, you were talking about risk 18 aversion in this paragraph, and you write, "Second, 19 any reduction in economic value depends on a 20 patient's level of risk aversion, which has been 21 shown to vary across individuals." 22 Do you see that? 23 A. Uh-huh. Yes. 24 Q. When discussing risk aversion, isn't it 25 necessary that a person who is averting risk</p>	<p style="text-align: right;">Page 281</p> <p>1 would need to know the risk aversion but to know 2 their risk aversion you don't need patient knowledge 3 of various events in the future. 4 Q. But you do agree that the additional risk 5 that nitrosamines in the affected valsartan could in 6 some instances reduce the economic value of the 7 drug, right? 8 A. In some instances, yes. 9 MS. HILTON: Can we go off the record. I 10 may be close to finish and I just want to check in 11 with my colleagues. 12 THE VIDEOGRAPHER: Okay. We're off the 13 record at 4:03 p.m. Pacific time. 14 (Whereupon, a brief recess was taken.) 15 THE VIDEOGRAPHER: We are back on the 16 record. The time is 4:09 p.m. Pacific time. 17 BY MS. HILTON: 18 Q. Dr. Chan, have you ever prescribed 19 valsartan to a patient? 20 A. Yes. 21 Q. How did you personally become aware of the 22 recall of the affected valsartan products? 23 A. I became aware of the recall through this 24 case. 25 Q. So prior to this case, you had no</p>

<p style="text-align: right;">Page 282</p> <p>1 knowledge that the FDA had initiated an 2 unprecedented classwide recall of the affected 3 valsartan? 4 MR. STOY: Object to the form. 5 THE WITNESS: As a hospitalist, I don't 6 decide which valsartan, which -- specifically which 7 NDC gets delivered to a patient, gets dispensed to a 8 patient. I write valsartan, the dose, the 9 frequency, and I don't concern myself with whether 10 it's branded or generic and if it's generic, which 11 type of valsartan it is. So there's no reason for 12 me to pay attention to that. 13 BY MS. HILTON: 14 Q. And do you not concern yourself with these 15 things because the generic is supposed to be the 16 same as the branded drug? 17 MR. STOY: Object to the form. 18 THE WITNESS: That's not the reason that I 19 don't pay attention to these things. The reason 20 that I don't pay attention to these as a 21 hospitalist, personally as a clinician, is that I 22 don't determine which of these drugs, which NDC code 23 is going to be dispensed to a patient for whom I 24 prescribe valsartan. 25</p>	<p style="text-align: right;">Page 284</p> <p>1 BY MS. HILTON: 2 Q. And at what point in your education did 3 you learn about the impurities that may be present 4 in generic drugs? 5 A. I'm not sure if I remember the time in my 6 education. But I think it's in some ways common 7 sense. You know that generic drugs are made by 8 different manufacturers. You know that they're not 9 exactly the same. The requirement of generic drugs 10 is that they have the same active ingredient. It's 11 not required that they're exactly the same. 12 And so it follows naturally that there 13 might be things that differ between generic drugs 14 and branded drugs and that we don't know all of 15 these, including the generic manufacturers at the 16 time, don't know all of these things at this point 17 and some of these things could be revealed later on. 18 Q. Would it surprise you to know that one of 19 the generic manufacturers in this case had knowledge 20 that their valsartan contained nitrosamines a year 21 before they were actually recalled from the market? 22 MR. STOY: Object to the form. Beyond the 23 scope. Mischaracterizes. 24 THE WITNESS: I have no knowledge of that. 25 MR. STOY: Mischaracterizes the evidence.</p>
<p style="text-align: right;">Page 283</p> <p>1 BY MS. HILTON: 2 Q. Just generally, though, in your practice 3 as a physician do you have an expectation that the 4 generic products are the same as the branded 5 reference listed drugs? 6 MR. STOY: Objection. Beyond the scope of 7 his report. 8 You can answer. 9 THE WITNESS: This is not a -- this is 10 not -- this is not within the scope of my report. 11 Would you like me to comment on -- I'm not sure. 12 BY MS. HILTON: 13 Q. Yeah, I'm just asking you, as a physician, 14 you have that expectation that the generic drugs are 15 the same as the reference listed brand drugs? 16 MR. STOY: Object to the form. 17 Go ahead. 18 THE WITNESS: I think my main expectation 19 is that they should contain the same active 20 ingredient. I know that there is a process by which 21 we might identify impurities in drugs and recall 22 drugs. And that there is no guarantee that a 23 generic drug will be exactly the same as a branded 24 drug. 25</p>	<p style="text-align: right;">Page 285</p> <p>1 Go ahead. 2 THE WITNESS: I have no knowledge of that. 3 I'm not sure if I can comment on that. 4 BY MS. HILTON: 5 Q. Okay. Have you ever monitored any 6 patients for cancer? 7 A. No, not -- let me just -- let me clarify. 8 I have in the past ordered screening tests 9 for cancer. My current clinical responsibilities 10 does not primarily focus on screening for cancer as 11 a hospitalist. 12 Q. What screening tests did you order for 13 cancer? 14 A. In primary care you could order a number 15 of screening tests such as Pap smears or 16 colonoscopies. 17 Q. Aside from the opinions that are contained 18 within your report, do you intend to offer any other 19 opinions in this litigation? 20 A. I don't have any plans to do so right now. 21 MS. HILTON: Thank you, Doctor. I have no 22 further questions. 23 MR. STOY: Thank you. 24 Let's go off the record. 25 THE VIDEOGRAPHER: Off the record for the</p>

Page 286

1 day or does anyone have anything else?
 2 MR. STOY: We may have some follow-up
 3 questions. I want to take ten minutes.
 4 THE VIDEOGRAPHER: No problem.
 5 We're off the record at 4:15 p.m.
 6 (Whereupon, a brief recess was taken.)
 7 THE VIDEOGRAPHER: We are back on the
 8 record. The time is 4:26 p.m. Pacific team.
 9 EXAMINATION
 10 BY MR. STOY:
 11 Q. All right. Dr. Chan, good afternoon
 12 again. Welcome back. I know it's been a long day
 13 so I'm going to be brief but I do have a few
 14 follow-up questions to ask you, okay?
 15 A. Okay.
 16 Q. My first question is, as a matter of
 17 economics, can you explain the interplay between
 18 price and value?
 19 MS. HILTON: Objection to form.
 20 BY MR. STOY:
 21 Q. Go ahead.
 22 A. Sure.
 23 Value relates to the utility that somebody
 24 would get from a product and together this forms the
 25 demand curve. Price is something when you have a

Page 287

1 market and you have supply and where demand meets
 2 supply that's where you have price. So you can have
 3 value even if there's no market and even if there's
 4 no supply.
 5 Q. Are price and value considered
 6 interchangeable terms in economics?
 7 A. No.
 8 Q. Is economic value the same thing as
 9 equilibrium price?
 10 A. No.
 11 Q. In paragraph 44 of Dr. Conti's report, and
 12 I believe it's maybe Exhibit 3, you can pull it up
 13 if you want to, but I'm going to read a statement.
 14 She says, and I quote, According to
 15 economic theory, for a consumer product to have
 16 economic value, demand for the product must exist
 17 and supply must be allowed to meet demand.
 18 Do you agree with that statement by
 19 Dr. Conti regarding economic theory?
 20 A. No, I don't agree with that. That is not
 21 consistent with what I have described as economic
 22 theory and the relationship between price and value.
 23 Q. Can a product have economic value even if
 24 there is no equilibrium price in the market?
 25 A. Yes.

Page 288

1 Q. Is willingness to pay the only thing to
 2 consider in determining economic value?
 3 A. Yes. Willingness to pay and economic
 4 value are synonymous.
 5 Q. Dr. Chan, you were shown an article that
 6 you had previously written in the New England
 7 Journal of Medicine. I believe it was Exhibit 5.
 8 Do you remember that?
 9 A. Yes.
 10 Q. And then you were also shown some comments
 11 that were received that were sent to the author. I
 12 believe that was Exhibit 6.
 13 Do you remember that?
 14 A. Yes.
 15 Q. Is it uncommon for peer-reviewed
 16 publications for the authors to be sent comments by
 17 people?
 18 A. I don't know how common it is. But in
 19 this case, this was a comment that was a bit
 20 ancillary to the main analysis and we acknowledged
 21 the comment. And the article itself, I think the
 22 main points that we made in the article itself are
 23 still valid. The -- it's also -- it also bears
 24 mentioning that the comment didn't really make a
 25 point about averages versus other types of moments

Page 289

1 of a statistical distribution.
 2 Q. Did the New England Journal of Medicine
 3 retract your article after those comments were
 4 submitted?
 5 A. No.
 6 Q. Was the article ever retracted?
 7 A. No.
 8 Q. Now, I want you to go back to your report,
 9 Dr. Chan. And specifically, I want you to look at
 10 paragraph 117.
 11 Are you there?
 12 A. Okay. Yep.
 13 Q. Do you recall earlier you were asked some
 14 questions with regard to the use of averages?
 15 A. Yes.
 16 Q. Why is Dr. Song's use of averages in his
 17 report inappropriate, in your opinion?
 18 MS. HILTON: Objection to form.
 19 THE WITNESS: And I want to clarify that
 20 averages are not in and of themselves a bad thing.
 21 It depends on how you're using the averages and as I
 22 said during the deposition, which sample you're
 23 getting the average from and what purpose you're
 24 using the average for.
 25 The problem with Dr. Song's use of an

<p>Page 290</p> <p>1 average from some publication that looks at another 2 population, probably a general population, comparing 3 private insurance prices and Medicare prices, is 4 that that average might not be applicable to the 5 class at hand, which by definition, would have had 6 to be patients who took valsartan. And it's 7 possible that that average could be wildly off. 8 MR. STOIY: Okay. Thank you, Dr. Chan. I 9 have no further questions. 10 MS. HILTON: Can we go off the record for 11 a moment. I just want to confer. 12 THE VIDEOGRAPHER: Okay. We're off the 13 record at 4:32 p.m. 14 (Whereupon, a brief recess was taken.) 15 THE VIDEOGRAPHER: We are back on the 16 record at 4:35 p.m. 17 EXAMINATION 18 BY MS. HILTON: 19 Q. Doctor, Mr. Stoy asked you questions about 20 equilibrium price. 21 Do you remember that? 22 A. Yes. 23 Q. What's your definition of equilibrium 24 price? 25 A. Equilibrium price is where supply and</p>	<p>Page 292</p> <p>1 wrong if you just look at variation in prices, which 2 we have done in the report. 3 Q. You have not, in fact, done any 4 calculations, though, to determine if the averages 5 are wildly off or not applicable? 6 A. The other thing I think I've said in the 7 deposition is that I think it would be quite 8 difficult to actually calculate it so I don't think 9 anybody's done any calculations to show me something 10 about what that price would be other than what the 11 overall average is. 12 Q. Including you, you have not done? 13 A. Include me or -- 14 Q. Okay. 15 A. -- anybody else among the plaintiffs' 16 side. 17 Q. Got it. 18 MR. MIGLIACCIO: I have no further 19 questions. Thank you, Doctor. 20 MR. STOIY: Nothing further from us. 21 THE VIDEOGRAPHER: Okay. This marks the 22 end of today's testimony of Dr. David Chan. 23 We are off the record at 4:37 p.m. Pacific 24 time. 25 (Whereupon, the deposition was concluded</p>
<p>Page 291</p> <p>1 demand meet in terms of price. 2 Q. And it's your testimony that a product can 3 have economic value even if there is no equilibrium 4 price in the market? 5 A. Yes. 6 MS. HILTON: I have no further questions. 7 EXAMINATION 8 BY MR. MIGLIACCIO: 9 Q. Doctor, I just have I think one. Maybe -- 10 I thought it was one. We'll see. 11 You -- Mr. Stoy asked you questions about 12 averages in paragraph 117. And you testified 13 that -- that the average might not be applicable to 14 the class at hand and that it's possible that that 15 average could be wildly off, correct? 16 A. Correct. 17 Q. That was your testimony. 18 I just want to confirm you have not, in 19 fact, done any calculations to determine if the 20 average is not applicable to the class at hand or 21 that the average is, in fact, wildly off? 22 A. I think I said during the deposition that 23 I have evidence that it's likely that members of the 24 class will be different than the average population 25 and that there is scope for getting the average</p>	<p>Page 293</p> <p>1 at 4:37 p.m.) 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>

Page 294

INSTRUCTIONS TO WITNESS

Please read your deposition over carefully and make any necessary corrections. You should state the reason in the appropriate space on the errata sheet for any corrections that are made.

After doing so, please sign the errata sheet and date it.

You are signing same subject to the changes you have noted on the errata sheet, which will be attached to your deposition.

It is imperative that you return the original errata sheet to the deposing attorney within thirty (30) days of receipt of the deposition transcript by you. If you fail to do so, the deposition transcript may be deemed to be accurate and may be used in court.

Page 295

ERRATA SHEET

3	PAGE	LINE	CHANGE	
4	_____	_____	_____	
5	REASON:_____			
6	PAGE	LINE	CHANGE	
7	_____	_____	_____	
8	REASON:_____			
9	PAGE	LINE	CHANGE	
10	_____	_____	_____	
11	REASON:_____			
12	PAGE	LINE	CHANGE	
13	_____	_____	_____	
14	REASON:_____			
15	PAGE	LINE	CHANGE	
16	_____	_____	_____	
17	REASON:_____			
18	PAGE	LINE	CHANGE	
19	_____	_____	_____	
20	REASON:_____			
21	PAGE	LINE	CHANGE	
22	_____	_____	_____	
23	REASON:_____			
24				
25				

Page 296

ACKNOWLEDGMENT OF DEPONENT

I, _____, do hereby certify that I have read the foregoing pages, and that the same is a correct transcription of the answers given by me to the questions therein propounded, except for the corrections or changes in form or substance, if any, noted in the attached Errata Sheet.

 DAVID C. CHAN, JR., M.D. DATE

Page 297

STATE OF CALIFORNIA)
 COUNTY OF YOLO)

I, ELAINA BULDA-JONES, a Certified Shorthand Reporter of the State of California, duly authorized to administer oaths pursuant to Section 2025 of the California Code of Civil Procedure, do hereby certify that

DAVID C. CHAN, JR., M.D.,

the witness in the foregoing deposition, was by me duly sworn to testify the truth, the whole truth and nothing but the truth in the within-entitled cause; that said testimony of said witness was reported by me, a disinterested person, and was thereafter transcribed under my direction into typewriting and is a true and correct transcription of said proceedings.

I further certify that I am not of counsel or attorney for either or any of the parties in the foregoing deposition and caption named, nor in any way interested in the outcome of the cause named in said deposition dated the 7th day of March, 2022.

ELAINA BULDA-JONES, CSR 11720

<u>WORD</u> <u>INDEX</u>				
< \$ >	1310 230:13	2016 253:14	287:12	44 83:7
\$125 211:1	1316 227:17	2017 253:14	3.5 228:24	287:11
\$150 210:24	133 261:3	2018 163:21,	3:03 243:7	47 117:7
\$850 34:5	265:10	23 164:5	30 42:22	
\$850-an-hour	1338 235:14	254:3 271:14	159:14 294:14	< 5 >
36:20	134 274:15	272:1, 10, 12,	300 3:3, 8, 14	5 5:20 180:3,
	137 279:17	16	301 3:21	5, 7 196:25
	15 97:12	202.452.7318	30-pack	197:5, 13
	15219 3:21	3:4	113:13	205:10, 11
	16 5:16	202.470.3520	31 77:20	236:14, 15
	107:17	2:11	310.284.3766	288:7
< 0 >	165 5:16	2020 69:19,	3:9, 15	50 97:10
0.5 228:24	17 226:24	20 141:7	3100 4:11	181:12 236:8,
237:7	1700 3:3	2021 77:21	32 96:3	20 237:7
02109 4:18	18,000 110:10	141:8	119:21 227:10	238:21
07701 4:3	111:25	2022 1:19	34.8 88:22	504.524.5777
	19.1 88:25	5:16 7:4	35 102:22, 23	2:6
< 1 >	89:3, 5, 10	77:16 297:21	108:14 117:6	53 4:18
1 5:14 10:24	< 2 >	2025 297:5	118:14	122:23
11:1 97:5, 6	2 4:3 5:14	2029 3:8, 14	38 88:20	57 113:6
110:18 111:4,	41:2, 3 79:4	205 5:20	38.2 88:24	59 114:13
18, 24 112:8,	100:3 111:18,	207 147:23	38th 3:21	5th 179:21, 23
16 141:6	19 113:2	211 4:3	3rd 7:4 77:16	180:2, 4, 10
210:7 211:13,	116:20	212.255.9500		196:22 213:18
18 229:9	120:15, 17, 19	2:15	< 4 >	
234:13	160:7 168:19,	212.801.9306	4 5:16	< 6 >
1:41 204:22	20 210:13	2:22	165:13, 14	6 5:24 216:6,
1:57 204:25	229:23	213.689.7424	211:4 229:15	9 237:3
10 236:9	231:25 260:25	4:12	232:11 237:2	288:12
10:19 107:8	2.59 113:6	216 5:24	4.4 6:2	60 114:13
10:44 107:11	2:51 243:4	225 6:1	4:03 281:13	617.213.7047
100 168:21	20 35:2, 4, 5	23 254:18	4:09 281:16	4:19
100,000	38:21 42:21	246 5:5	4:15 286:5	63 158:18
110:18	97:11 113:13	250 2:14	4:26 286:8	163:8 164:3,
10013-1413	133:8 236:9,	252 262:7	4:32 290:13	9 202:23
2:14	20	262 6:2	4:35 290:16	203:5, 13
10017 2:21	20.2 88:22	27th 4:18	4:37 292:23	63.3 163:20
11 5:14	89:2, 5, 7, 10	286 5:6	293:1	164:20 202:23
251:24	20002 2:10	2875 1:7 7:8	40 117:5	65 152:17, 20
11:56 159:23	20006-3807	29,498 110:15	400 179:16,	163:14
117 176:4, 7	3:3	290 5:7	24 180:9	202:24 203:2
186:25	2008 42:14	291 5:8	196:19, 23	68 86:8 87:23
289:10 291:12	43:22		197:2	69 148:1
11720 1:24	2010 44:4, 5	< 3 >	41 5:14	
297:25	2012 253:14	3 1:19 5:16	412 2:10	< 7 >
12 5:16	254:3 272:12	11:9 77:9	412.263.4397	7 6:1 225:15,
110:16, 18	2013 40:3	113:24, 25	3:22	16 234:13, 16,
12:10 63:3, 4	44:6 46:20	122:4 210:18	42 113:2	17 235:14
12:36 160:1	47:1 48:12, 15	227:14, 15	114:12	262:3
12th 20:22		229:20 232:6	116:20 160:5,	7:49 1:19 7:5
22:9 78:18, 22			11	

701 2:5	a.m 1:19 7:5	194:3, 6, 11	Administration	agent 109:6, 7,
70130 2:6	63:6, 9 107:8,	221:13	140:23	8, 11, 14
732.924.8171	11 159:23	244:10 247:2	admitted	agents 62:15
4:4	A-2 43:12, 13	294:16	42:24	aggregate
77 5:16	100:4, 5	acknowledged	adulterated	264:5
7th 297:21	250:17	216:23 288:20	251:18	aggregated
	Abaluck	ACKNOWLEDGMENT	255:21	194:19
< 8 >	102:12	296:1	256:17, 24	aggressive
8 5:4 6:2	abdominal	acronym	257:7, 12	124:24, 25
113:12, 13	120:11	129:13	258:21	125:24 126:4,
143:6 146:18	ability 9:1	act 249:20, 23	adulteration	24 127:13
171:12	able 11:16	250:2, 5	257:14, 16	aggressiveness
172:10 262:4,	39:10 65:11	Actavis 2:18	adults 97:10	127:20
7, 8, 11	66:21 134:18	Action 74:1, 4	201:20	Agha 102:11
8,000 110:8,	165:11	99:21 135:14	advance 51:7,	ago 48:7
18 111:4, 24	166:12	173:23	9, 13	147:5 164:5
112:8, 16	180:21	Actions 1:9	advanced	agree 26:13,
228:23	186:18 189:1	257:2	15:10 58:21	24 27:14
8.2 113:14	193:17 203:8	active 283:19	advisor 250:11	59:19 62:7
80 97:10	223:13 243:23	284:10	Affairs 44:10	89:2 96:13
865 4:11	absence 40:10,	activities	affiliate 70:11	103:25
87 164:24	12, 18 41:19	246:22 247:2,	affiliated 43:8	104:20
88 28:8	abstracting	11, 12 251:6	237:24	121:10 161:7,
110:3, 20	170:19	add 111:8	affiliation	17 162:1, 9,
111:3	academia	118:11	100:18 236:1,	12 164:2, 5, 8,
8th 2:14	91:6, 9	added 104:1,	2	12 191:18
	academic	21	affirmatively	193:24
< 9 >	44:8 47:15	addition 47:16	260:1	232:15 259:5
9 171:23	49:6 91:18	additional	Afghanistan	265:1 268:4
179:2 206:25	142:15 205:3	110:7, 9	50:13	281:4 287:18,
207:8 212:23	225:5 238:7,	114:25	Afib 154:3	20
9/11 95:16, 21	25 249:25	120:22	afraid 37:22	agreed 7:13
9:01 63:6	acceptable	125:21	afternoon	agreement
9:15 63:9	110:17 111:4,	149:17 242:3,	246:11 286:11	35:10, 12, 14
90 50:5	13	4 281:4	AG 79:21	70:7
90017-5450	accepted	address 10:25	age 50:13, 18	agreements
4:11	162:2, 13, 18	29:23 275:15	120:25 121:1	169:21
90067 3:9, 14	165:24	addresses	152:20	ahead 14:19
92 110:19, 21	166:16, 25	259:1 276:16	158:16	26:16 30:23
93 110:22, 24	account 195:7	adds 242:2	160:12, 16	58:3 59:24
111:1	199:8, 19	Adherence	163:8 164:3,	60:10 84:11
95 223:17	270:5	100:10	8, 9, 19	103:23
95th 179:22,	accounted	administer	202:22, 24, 25	111:11
23 180:4, 10	195:22	7:21 153:10	203:3, 5	114:23
196:22 197:5	Accuracy	297:5	aged 97:10	116:11
213:18	5:20 92:16	administered	agencies 85:5	121:14
99 223:18	155:20, 22	153:5	156:4	130:16
	219:1	administering	agenda 91:10	131:22
< A >	accurate	93:23	142:17	135:19, 22
	142:7 192:21			150:12 154:9
	193:4, 20			173:15

175:23 191:4 207:6, 16 223:23 238:10, 13 263:17 276:25 277:3 283:17 285:1 286:21 Aid 3:4, 12 178:2 al 5:23, 25 Alaska 182:15 Albertsons 3:1 Alfano 3:19 allow 51:5 allowed 22:1 65:19 258:15 261:15 287:17 allows 70:8 194:2 alluding 265:11 Alotman@dua nemorris.com 4:14 alter 174:3, 7 alternative 206:20 Alto 44:8, 10 46:15, 20 47:2 49:16 52:1 53:21 55:1, 16 ALYSON 4:10 AMA 221:14 amenable 58:8 Amended 5:14 30:10 74:1, 4 129:6 American 222:7, 9 amount 78:24 139:9 175:5 219:24 260:20 amounts 183:24 analyses 19:23 20:3 22:23 71:18 137:5 151:13 178:20	187:24 188:3 244:19 251:7 254:19 277:9, 11 Analysis 13:18, 19, 20 14:4, 5, 24 15:23 16:8 19:21, 22 20:4, 7, 24 21:7, 23 22:3, 14 23:2, 23, 25 24:2, 7 25:15, 23 26:1, 10 27:23 28:3 30:19 32:11, 15, 25 33:7, 14 34:10 35:6, 13 69:22 70:2, 7, 10, 11, 14 76:9, 13 82:18 111:15 141:22 149:6 191:25 199:3, 8, 12, 15, 18 204:5 223:25 243:21 246:14 250:25 251:4 253:25 258:6 263:9 268:11 274:22 279:12 288:20 analyst 15:12 analytical 244:13, 17 analyzed 251:9 analyzing 213:15 ancillary 116:5 288:20 and/or 24:12 Angeles 3:9, 14 4:11 announcement 148:3 annual 185:8	annually 170:2 185:7 answer 18:10, 20 19:1 21:20 22:13, 15 24:14, 16, 25 27:9, 25 28:14 29:1, 8 31:6 34:24 37:3, 4, 22 63:22 64:5 65:12 66:16, 22 67:15 69:5, 10, 11 71:5, 12 73:1 83:21 90:10 105:25 127:10 134:18 135:5, 21 136:13 152:3, 7 153:3 180:15 191:12 195:9 197:12 199:10 244:3, 5 268:12 277:8, 15 279:10 283:8 answerable 191:16 answered 52:13 70:19 132:1 138:11 173:10 185:12 188:24 190:19 191:3 256:18, 25 276:24 277:2 answering 134:14 answers 8:20 31:9 296:7 Antonio 198:7 anybody 9:23 168:11 172:3 191:10 192:17 278:25 292:15 anybody's	292:9 anyway 8:17 apparently 96:10 appear 65:4 APPEARANC ES 2:1 appearing 7:13 Appendix 41:9 63:17 72:4 73:22 applicable 108:16 192:13 216:25 290:4 291:13, 20 292:5 applied 91:24 93:1 276:11 applies 265:7 apply 166:24 214:20 232:22 233:4 applying 158:11 214:12 appointment 44:8 100:16 appointments 43:8 246:24 appreciate 197:16 211:12 approach 217:5, 7 261:11 276:10, 11 appropriate 94:15, 17 118:12 149:8 166:17, 18, 21, 23 178:9 217:11 218:12 294:5 approval 249:16 250:8 approved 94:21, 24 95:5 100:22 approximate 110:15	approximately 110:16, 18 area 98:24 115:22 136:20 144:7 areas 46:10, 11 argue 192:7 arguing 217:3 arithmetic 37:21 arrangement 33:25 34:3, 4, 6 arrangements 33:18 151:11 arrive 232:16 279:6 article 117:6 166:20 205:25 206:3 288:5, 21, 22 289:3, 6 ascertain 277:23 ASHLEY 3:2 Ashley.Jones@ bipc.com 3:4 aside 78:12 94:10 96:22 130:8 177:9 224:17, 23 285:17 asked 12:2, 5 27:20 28:2, 6, 10, 19, 22 29:15 32:18 65:1 66:8 93:22 119:22 128:22 135:25 165:21 173:9, 10 181:18, 19 185:12 188:24 191:3 203:3 242:18 256:18, 25 276:24 277:1, 5 289:13 290:19 291:11
---	---	---	---	--

<p>asking 25:2, 4 29:3 37:7, 8, 13 38:10 60:3, 6, 7 72:8, 9, 10 102:25 132:5, 6 136:4 148:7 166:5 180:17 182:24 186:2 197:15, 17 200:10 206:2 208:13, 16 209:21 210:14, 18 211:4 224:1 238:23, 25 239:2 240:12 245:18 246:13 269:24 283:13 asks 210:7 aspect 258:25 aspects 66:2 248:5, 17 asserted 205:20 206:7 asserts 261:12 assess 129:22 130:6 161:14 267:24 assessing 259:5 assessment 258:17 assignment 29:2, 3, 4, 5, 10, 19 109:23 171:8 assistants 211:21 assisting 27:24 52:8 associate 266:9 associated 109:12, 13 110:1 111:20 114:8, 18 127:7 132:22 144:2 154:10</p>	<p>221:7 247:16 254:11 273:25 Association 222:8, 9 assume 20:13 132:5 150:1 199:22 219:21 244:3 255:20 256:6, 16, 23 257:19, 25 assumes 130:15, 21 Assuming 202:15, 16 265:24 assumption 83:18 132:7, 13 171:5, 6 172:1 173:1, 5 174:2, 12 175:24 180:20 181:14 202:17 256:1 258:4, 5 assumptions 181:5, 8 255:18 assure 266:6 asymmetric 268:20 269:1 asymmetry 268:5 asymptomatic 96:10 108:1, 6 119:12, 25 120:6, 14 121:5, 8 at-issue 158:11 179:19 atrial 99:17 101:13, 16 154:4, 6, 13, 17, 20, 21, 23, 24 155:2 at-risk 90:18, 23 91:3 attached 294:11 296:10</p>	<p>attachment 255:6 attachments 41:2 attempt 186:6 attending 43:1 53:22 55:3, 5 attention 205:25 282:12, 19, 20 attorney 246:12 294:13 297:18 attorneys 172:8 attribution 34:9, 14 35:6 245:4, 15, 21 audience 93:2, 3 166:23 August 271:14 272:1, 10, 16 author 288:11 authored 64:2 authoritative 165:24 166:16, 25 authority 98:10 authorized 297:4 authors 101:24 102:1 288:16 automatically 203:8 available 105:4 109:1 123:22 137:20 142:21, 22, 24 189:8 191:17, 19, 20, 21 193:23, 25 194:7 Avenue 2:21 4:3 average 42:10, 13 44:18</p>	<p>46:24 96:15, 19 125:5, 7 137:6 151:17 156:14, 16, 19, 21 157:1, 2, 8, 9, 10, 11, 13, 16, 24 158:5, 8, 16 163:7 164:3, 9, 19 168:12, 25 169:2 170:3, 5 176:14, 16, 22, 23 186:15, 16, 19, 21, 22 187:7, 12, 14 190:24 191:25 192:11 195:13 198:21 199:16 202:21 203:3, 5, 16 206:22 207:1, 8, 21 208:6, 7, 8, 11, 21, 22 209:3, 6, 20, 21, 22 210:10, 11 212:14, 20, 24 213:10, 13 214:12, 14, 21 215:3 226:13 232:11, 12, 22 233:19, 20, 22, 24, 25 289:23, 24 290:1, 4, 7 291:13, 15, 20, 21, 24, 25 292:11 averages 156:4, 10 157:4 168:3, 5, 11 179:6, 8, 9 187:6 208:3, 4, 14, 16 210:17 211:9, 25 212:3 214:10 215:21 231:18 232:16, 19</p>	<p>233:7, 12, 17 288:25 289:14, 16, 20, 21 291:12 292:4 averaging 207:23, 24 209:5, 11 211:14, 16, 18, 23 aversion 279:18, 20, 24 280:4, 13, 15, 18, 21 281:1, 2 averting 279:25 aware 63:24 74:14, 18, 21, 22, 25 222:25 244:18, 19 252:12, 17 258:18, 24 271:13 276:9 281:21, 23 Awareness 100:10 axis 237:1, 2 < B > back 37:18, 23, 24 39:21, 25 48:21 49:3 63:3, 8 107:10 119:21 133:22 136:17 146:1 153:16 159:25 160:5 161:3 168:15 204:24 229:24 235:3 243:6 281:15 286:7, 12 289:8 290:15 background 21:15 38:24 79:14 bad 289:20 balance 59:2</p>
---	---	---	--	--

balanced 184:16	43:6 172:9	287:12 288:7, 12	12, 13, 14 197:21 236:2, 21	283:4, 23 284:14
Balestrieri 80:25 81:1, 6	begins 96:7	belong 55:5	bigger 180:21, 24 182:20	breaching 66:13
ball 127:11	behaved 215:9	benchmarks 206:15	biggest 56:15	break 9:12 59:11, 14
ballpark 18:1 38:14, 18, 21 179:13	behavior 91:13 92:23 94:13, 14	benefit 228:14, 17 246:16, 22 247:3, 13, 16, 18, 21 248:3, 5, 14, 18 259:19 260:3 269:13	bill 82:15 billed 35:7 36:24	62:19 107:2, 15 133:22 159:11 161:5 163:7 243:2
bands 50:18	believe 9:18 10:9, 19 13:23 15:14 16:8, 22 17:2, 13 20:1 23:15 24:6 26:4 27:7, 11, 17 28:4 29:13, 20 30:5, 16, 17 35:18 36:14 48:3 49:2 63:25 69:18 70:12 74:12 79:16 80:2, 15, 21 87:3, 10 97:4 102:4 108:11 113:1, 23 115:16, 25 120:15 138:24 142:23 144:25 146:1 163:24 164:21 168:19 176:14 178:14, 17 185:14, 17 187:12, 18 198:11, 14 200:12, 13 217:23 230:11 231:11 241:11 242:6 245:10 250:16 251:24 252:5, 9 254:9, 12, 15 257:9 260:24 266:21 269:10	benefits 57:25 58:6 59:3 60:3, 15, 17 61:5 99:20 247:5 248:9, 21 258:9 266:13, 14 268:1 272:20	billing 139:20, 23 140:5 biopsies 128:1 biopsy 126:11 127:13, 18 128:6, 16, 17 bit 14:21 15:9 42:7, 9, 12 50:23 61:11 80:11 90:13 92:6 133:24 134:20 146:21 148:5 149:4 184:20 188:4 198:20 204:9 214:24 256:22 288:19	breaks 9:11 breast 123:1 Brian 14:8 15:5 23:22 25:25 26:11 27:3 76:17 80:5 81:21 Bridge 4:3 brief 63:7 107:9 151:25 159:24 204:23 234:19 242:16 243:5 267:11 281:14 286:6, 13 290:14
based 98:2 99:19 108:22 115:16 117:13 118:13, 19 120:25 121:1 126:18 163:20 164:14 187:6 221:9 261:17 262:17	basic 27:3 215:24	Berkeley 79:17	bladder 123:11	briefly 7:16 14:15 160:5
basically 70:8 122:9 244:13 246:25	basis 21:24 111:25 115:7, 12 128:11 172:25 185:8 196:20, 21 264:20	Bernard 81:3, 6	blocks 48:4, 5, 9, 10, 14, 15	Brigham 39:23 42:6, 23 43:20 44:13, 14
bat 151:5	BAZAN 4:9	best 8:20 10:14 101:21 127:3 255:11	blood 121:10, 23 122:5, 9 123:12 258:10	bring 165:12
bear 77:3 148:20 149:4 150:7 162:25 216:4 225:13 248:15 277:10	bearing 150:16 272:10, 13	Beth 43:2, 18 44:3 48:24 49:1, 12, 24 50:2, 6, 15 52:2	Bob 17:11 body 269:15 bone 92:9 bore 253:15 borne 149:8, 12, 18 Bosick 3:20 boss 97:21 Boston 4:18 13:25 39:23 bottom 227:19 bound 132:2, 14 brand 283:15 branded 144:18 282:10, 16	bringing 172:7 Britt 75:2 broad 48:23 66:20 92:5 99:21 108:5 112:19 119:24 120:14 134:13 broader 94:11 broadly 79:20 84:15 93:13 101:17 108:16 152:15 155:9 177:4
beginning 23:7 29:5		better 50:25 123:25 124:2 149:18 151:11 194:20 195:8, 10, 21 213:8 217:6 beyond 54:23 156:8 157:19 211:22 268:11 283:6 284:22 big 16:16 38:4, 11 87:14 138:20 144:6 179:17, 25 180:13 181:2 196:11,		Buchanan 3:2

budget 182:10 183:14, 21, 23 184:3, 16, 21, 25	call 9:8 17:11 80:15 81:2 123:9 143:16 151:6 214:4 215:22 243:22 253:14 261:7, 23 262:20	25 89:18, 25 90:1, 21 92:3 93:10, 14, 17 94:7 97:9 98:7, 9, 10, 13, 15, 19, 23 99:5, 10 102:18 109:8, 12 110:1, 7, 9, 17 111:5, 13 112:6, 9 113:3, 9, 12, 18, 22 115:1, 15, 19, 21 116:16, 22 118:19 119:5 120:8, 11, 18 121:1, 2 122:10, 18 123:17, 21, 22, 24 124:1, 2, 20, 21 125:3, 4, 8, 20, 23 126:10, 17, 20, 22, 24 127:14, 20 129:25 131:9, 15, 25 132:3 149:24 150:4, 8, 15 160:15, 17 201:23 256:4, 8, 13 258:12 265:15, 23 266:18 275:22 278:12 285:6, 9, 10, 13	183:16 caption 297:19 captured 87:16 189:5, 6, 7 carcinogen 149:25 150:3 carcinogens 270:18 cardiologist 45:13 53:7, 12 54:2 cardiologists 230:25 231:2 cardiology 46:17 49:19 54:14 cardiothoracic 211:1 care 9:9 42:7, 8, 13 44:10 45:3, 4 54:12 55:18, 19 56:7, 16 92:23 98:19 128:5, 6 136:23 142:10 155:25 156:25 157:11 168:6 169:3 170:20 195:16 236:6, 7, 8 247:19 285:14 career 42:2 73:15 careful 151:3 carefully 294:3 case 8:6 10:5 13:11 23:6 26:8, 14, 22, 25 27:4, 5, 6, 8, 10, 13, 18, 19 28:1, 5 29:3, 13, 21 31:7, 9 34:7 64:10, 21 65:9 66:12, 17 68:9 70:22	71:21 72:5, 23 74:20 77:20 79:25 82:21 83:1 84:7 85:2 86:2 88:3, 10 94:3 106:3 107:23 110:7, 10 123:6 137:25 156:16 158:7 166:19, 24 167:23 172:8 173:19 175:20 200:9 208:5, 22 212:23 219:3 233:16 235:25 236:6 240:13 245:14 270:15 271:17 273:15, 21 281:24, 25 284:19 288:19 cases 24:3, 5, 10, 12, 17 25:12 26:8 62:12 63:15, 18, 25 64:2, 10, 14, 16, 17, 18, 19, 21, 23 65:4 67:8, 9, 18 68:7, 19 69:16, 21 70:23 71:9 72:9, 21 73:2, 9, 17 114:25 122:6 134:22 135:13 216:24 217:24 221:17 239:18, 19 247:25 248:1 catching 61:6 CATELLO 3:19 Catenacci 74:25
budgeted 184:12	called 7:23 34:8 35:23 42:19 45:25 53:22 70:11 100:24 122:9 139:19 184:15 208:13 213:19 215:13 218:18 229:7 231:8 247:3 280:9	25 89:18, 25 90:1, 21 92:3 93:10, 14, 17 94:7 97:9 98:7, 9, 10, 13, 15, 19, 23 99:5, 10 102:18 109:8, 12 110:1, 7, 9, 17 111:5, 13 112:6, 9 113:3, 9, 12, 18, 22 115:1, 15, 19, 21 116:16, 22 118:19 119:5 120:8, 11, 18 121:1, 2 122:10, 18 123:17, 21, 22, 24 124:1, 2, 20, 21 125:3, 4, 8, 20, 23 126:10, 17, 20, 22, 24 127:14, 20 129:25 131:9, 15, 25 132:3 149:24 150:4, 8, 15 160:15, 17 201:23 256:4, 8, 13 258:12 265:15, 23 266:18 275:22 278:12 285:6, 9, 10, 13	183:16 caption 297:19 captured 87:16 189:5, 6, 7 carcinogen 149:25 150:3 carcinogens 270:18 cardiologist 45:13 53:7, 12 54:2 cardiologists 230:25 231:2 cardiology 46:17 49:19 54:14 cardiothoracic 211:1 care 9:9 42:7, 8, 13 44:10 45:3, 4 54:12 55:18, 19 56:7, 16 92:23 98:19 128:5, 6 136:23 142:10 155:25 156:25 157:11 168:6 169:3 170:20 195:16 236:6, 7, 8 247:19 285:14 career 42:2 73:15 careful 151:3 carefully 294:3 case 8:6 10:5 13:11 23:6 26:8, 14, 22, 25 27:4, 5, 6, 8, 10, 13, 18, 19 28:1, 5 29:3, 13, 21 31:7, 9 34:7 64:10, 21 65:9 66:12, 17 68:9 70:22	71:21 72:5, 23 74:20 77:20 79:25 82:21 83:1 84:7 85:2 86:2 88:3, 10 94:3 106:3 107:23 110:7, 10 123:6 137:25 156:16 158:7 166:19, 24 167:23 172:8 173:19 175:20 200:9 208:5, 22 212:23 219:3 233:16 235:25 236:6 240:13 245:14 270:15 271:17 273:15, 21 281:24, 25 284:19 288:19 cases 24:3, 5, 10, 12, 17 25:12 26:8 62:12 63:15, 18, 25 64:2, 10, 14, 16, 17, 18, 19, 21, 23 65:4 67:8, 9, 18 68:7, 19 69:16, 21 70:23 71:9 72:9, 21 73:2, 9, 17 114:25 122:6 134:22 135:13 216:24 217:24 221:17 239:18, 19 247:25 248:1 catching 61:6 CATELLO 3:19 Catenacci 74:25
budgeting 183:13, 16, 19 184:7	calling 273:2 calls 13:17, 18 14:3 19:22 20:4, 6, 12, 13, 16, 19, 23, 25 21:4, 6 76:13, 15, 16 80:16 81:2, 5, 12, 23 150:10 161:11 255:23	25 89:18, 25 90:1, 21 92:3 93:10, 14, 17 94:7 97:9 98:7, 9, 10, 13, 15, 19, 23 99:5, 10 102:18 109:8, 12 110:1, 7, 9, 17 111:5, 13 112:6, 9 113:3, 9, 12, 18, 22 115:1, 15, 19, 21 116:16, 22 118:19 119:5 120:8, 11, 18 121:1, 2 122:10, 18 123:17, 21, 22, 24 124:1, 2, 20, 21 125:3, 4, 8, 20, 23 126:10, 17, 20, 22, 24 127:14, 20 129:25 131:9, 15, 25 132:3 149:24 150:4, 8, 15 160:15, 17 201:23 256:4, 8, 13 258:12 265:15, 23 266:18 275:22 278:12 285:6, 9, 10, 13	183:16 caption 297:19 captured 87:16 189:5, 6, 7 carcinogen 149:25 150:3 carcinogens 270:18 cardiologist 45:13 53:7, 12 54:2 cardiologists 230:25 231:2 cardiology 46:17 49:19 54:14 cardiothoracic 211:1 care 9:9 42:7, 8, 13 44:10 45:3, 4 54:12 55:18, 19 56:7, 16 92:23 98:19 128:5, 6 136:23 142:10 155:25 156:25 157:11 168:6 169:3 170:20 195:16 236:6, 7, 8 247:19 285:14 career 42:2 73:15 careful 151:3 carefully 294:3 case 8:6 10:5 13:11 23:6 26:8, 14, 22, 25 27:4, 5, 6, 8, 10, 13, 18, 19 28:1, 5 29:3, 13, 21 31:7, 9 34:7 64:10, 21 65:9 66:12, 17 68:9 70:22	71:21 72:5, 23 74:20 77:20 79:25 82:21 83:1 84:7 85:2 86:2 88:3, 10 94:3 106:3 107:23 110:7, 10 123:6 137:25 156:16 158:7 166:19, 24 167:23 172:8 173:19 175:20 200:9 208:5, 22 212:23 219:3 233:16 235:25 236:6 240:13 245:14 270:15 271:17 273:15, 21 281:24, 25 284:19 288:19 cases 24:3, 5, 10, 12, 17 25:12 26:8 62:12 63:15, 18, 25 64:2, 10, 14, 16, 17, 18, 19, 21, 23 65:4 67:8, 9, 18 68:7, 19 69:16, 21 70:23 71:9 72:9, 21 73:2, 9, 17 114:25 122:6 134:22 135:13 216:24 217:24 221:17 239:18, 19 247:25 248:1 catching 61:6 CATELLO 3:19 Catenacci 74:25
BULDA-	CAMDEN 1:3	25 89:18, 25 90:1, 21 92:3 93:10, 14, 17 94:7 97:9 98:7, 9, 10, 13, 15, 19, 23 99:5, 10 102:18 109:8, 12 110:1, 7, 9, 17 111:5, 13 112:6, 9 113:3, 9, 12, 18, 22 115:1, 15, 19, 21 116:16, 22 118:19 119:5 120:8, 11, 18 121:1, 2 122:10, 18 123:17, 21, 22, 24 124:1, 2, 20, 21 125:3, 4, 8, 20, 23 126:10, 17, 20, 22, 24 127:14, 20 129:25 131:9, 15, 25 132:3 149:24 150:4, 8, 15 160:15, 17 201:23 256:4, 8, 13 258:12 265:15, 23 266:18 275:22 278:12 285:6, 9, 10, 13	183:16 caption 297:19 captured 87:16 189:5, 6, 7 carcinogen 149:25 150:3 carcinogens 270:18 cardiologist 45:13 53:7, 12 54:2 cardiologists 230:25 231:2 cardiology 46:17 49:19 54:14 cardiothoracic 211:1 care 9:9 42:7, 8, 13 44:10 45:3, 4 54:12 55:18, 19 56:7, 16 92:23 98:19 128:5, 6 136:23 142:10 155:25 156:25 157:11 168:6 169:3 170:20 195:16 236:6, 7, 8 247:19 285:14 career 42:2 73:15 careful 151:3 carefully 294:3 case 8:6 10:5 13:11 23:6 26:8, 14, 22, 25 27:4, 5, 6, 8, 10, 13, 18, 19 28:1, 5 29:3, 13, 21 31:7, 9 34:7 64:10, 21 65:9 66:12, 17 68:9 70:22	71:21 72:5, 23 74:20 77:20 79:25 82:21 83:1 84:7 85:2 86:2 88:3, 10 94:3 106:3 107:23 110:7, 10 123:6 137:25 156:16 158:7 166:19, 24 167:23 172:8 173:19 175:20 200:9 208:5, 22 212:23 219:3 233:16 235:25 236:6 240:13 245:14 270:15 271:17 273:15, 21 281:24, 25 284:19 288:19 cases 24:3, 5, 10, 12, 17 25:12 26:8 62:12 63:15, 18, 25 64:2, 10, 14, 16, 17, 18, 19, 21, 23 65:4 67:8, 9, 18 68:7, 19 69:16, 21 70:23 71:9 72:9, 21 73:2, 9, 17 114:25 122:6 134:22 135:13 216:24 217:24 221:17 239:18, 19 247:25 248:1 catching 61:6 CATELLO 3:19 Catenacci 74:25
JONES 1:24 7:20 297:3, 25	Camp 2:5 campuses 52:3 cancer 31:16, 18, 19, 21, 23, 25 32:2, 3 55:12, 17, 24, 25 56:10 57:2, 3, 4, 5, 7, 9, 12, 15, 17, 21, 25 58:6, 7, 10, 11, 17, 18, 21, 25 59:4, 6, 20 60:17, 21, 22, 24 61:1, 8, 9, 14, 21 62:9, 13, 14 83:2, 5, 12, 14, 16 85:2, 7, 11, 20 87:25 88:22,	25 89:18, 25 90:1, 21 92:3 93:10, 14, 17 94:7 97:9 98:7, 9, 10, 13, 15, 19, 23 99:5, 10 102:18 109:8, 12 110:1, 7, 9, 17 111:5, 13 112:6, 9 113:3, 9, 12, 18, 22 115:1, 15, 19, 21 116:16, 22 118:19 119:5 120:8, 11, 18 121:1, 2 122:10, 18 123:17, 21, 22, 24 124:1, 2, 20, 21 125:3, 4, 8, 20, 23 126:10, 17, 20, 22, 24 127:14, 20 129:25 131:9, 15, 25 132:3 149:24 150:4, 8, 15 160:15, 17 201:23 256:4, 8, 13 258:12 265:15, 23 266:18 275:22 278:12 285:6, 9, 10, 13	183:16 caption 297:19 captured 87:16 189:5, 6, 7 carcinogen 149:25 150:3 carcinogens 270:18 cardiologist 45:13 53:7, 12 54:2 cardiologists 230:25 231:2 cardiology 46:17 49:19 54:14 cardiothoracic 211:1 care 9:9 42:7, 8, 13 44:10 45:3, 4 54:12 55:18, 19 56:7, 16 92:23 98:19 128:5, 6 136:23 142:10 155:25 156:25 157:11 168:6 169:3 170:20 195:16 236:6, 7, 8 247:19 285:14 career 42:2 73:15 careful 151:3 carefully 294:3 case 8:6 10:5 13:11 23:6 26:8, 14, 22, 25 27:4, 5, 6, 8, 10, 13, 18, 19 28:1, 5 29:3, 13, 21 31:7, 9 34:7 64:10, 21 65:9 66:12, 17 68:9 70:22	71:21 72:5, 23 74:20 77:20 79:25 82:21 83:1 84:7 85:2 86:2 88:3, 10 94:3 106:3 107:23 110:7, 10 123:6 137:25 156:16 158:7 166:19, 24 167:23 172:8 173:19 175:20 200:9 208:5, 22 212:23 219:3 233:16 235:25 236:6 240:13 245:14 270:15 271:17 273:15, 21 281:24, 25 284:19 288:19 cases 24:3, 5, 10, 12, 17 25:12 26:8 62:12 63:15, 18, 25 64:2, 10, 14, 16, 17, 18, 19, 21, 23 65:4 67:8, 9, 18 68:7, 19 69:16, 21 70:23 71:9 72:9, 21 73:2, 9, 17 114:25 122:6 134:22 135:13 216:24 217:24 221:17 239:18, 19 247:25 248:1 catching 61:6 CATELLO 3:19 Catenacci 74:25
burden 58:21 149:8, 12, 17 150:8, 16 151:9	calls 13:17, 18 14:3 19:22 20:4, 6, 12, 13, 16, 19, 23, 25 21:4, 6 76:13, 15, 16 80:16 81:2, 5, 12, 23 150:10 161:11 255:23	25 89:18, 25 90:1, 21 92:3 93:10, 14, 17 94:7 97:9 98:7, 9, 10, 13, 15, 19, 23 99:5, 10 102:18 109:8, 12 110:1, 7, 9, 17 111:5, 13 112:6, 9 113:3, 9, 12, 18, 22 115:1, 15, 19, 21 116:16, 22 118:19 119:5 120:8, 11, 18 121:1, 2 122:10, 18 123:17, 21, 22, 24 124:1, 2, 20, 21 125:3, 4, 8, 20, 23 126:10, 17, 20, 22, 24 127:14, 20 129:25 131:9, 15, 25 132:3 149:24 150:4, 8, 15 160:15, 17 201:23 256:4, 8, 13 258:12 265:15, 23 266:18 275:22 278:12 285:6, 9, 10, 13	183:16 caption 297:19 captured 87:16 189:5, 6, 7 carcinogen 149:25 150:3 carcinogens 270:18 cardiologist 45:13 53:7, 12 54:2 cardiologists 230:25 231:2 cardiology 46:17 49:19 54:14 cardiothoracic 211:1 care 9:9 42:7, 8, 13 44:10 45:3, 4 54:12 55:18, 19 56:7, 16 92:23 98:19 128:5, 6 136:23 142:10 155:25 156:25 157:11 168:6 169:3 170:20 195:16 236:6, 7, 8 247:19 285:14 career 42:2 73:15 careful 151:3 carefully 294:3 case 8:6 10:5 13:11 23:6 26:8, 14, 22, 25 27:4, 5, 6, 8, 10, 13, 18, 19 28:1, 5 29:3, 13, 21 31:7, 9 34:7 64:10, 21 65:9 66:12, 17 68:9 70:22	71:21 72:5, 23 74:20 77:20 79:25 82:21 83:1 84:7 85:2 86:2 88:3, 10 94:3 106:3 107:23 110:7, 10 123:6 137:25 156:16 158:7 166:19, 24 167:23 172:8 173:19 175:20 200:9 208:5, 22 212:23 219:3 233:16 235:25 236:6 240:13 245:14 270:15 271:17 273:15, 21 281:24, 25 284:19 288:19 cases 24:3, 5, 10, 12, 17 25:12 26:8 62:12 63:15, 18, 25 64:2, 10, 14, 16, 17, 18, 19, 21, 23 65:4 67:8, 9, 18 68:7, 19 69:16, 21 70:23 71:9 72:9, 21 73:2, 9, 17 114:25 122:6 134:22 135:13 216:24 217:24 221:17 239:18, 19 247:25 248:1 catching 61:6 CATELLO 3:19 Catenacci 74:25
Bureau 100:13, 25	calls 13:17, 18 14:3 19:22 20:4, 6, 12, 13, 16, 19, 23, 25 21:4, 6 76:13, 15, 16 80:16 81:2, 5, 12, 23 150:10 161:11 255:23	25 89:18, 25 90:1, 21 92:3 93:10, 14, 17 94:7 97:9 98:7, 9, 10, 13, 15, 19, 23 99:5, 10 102:18 109:8, 12 110:1, 7, 9, 17 111:5, 13 112:6, 9 113:3, 9, 12, 18, 22 115:1, 15, 19, 21 116:16, 22 118:19 119:5 120:8, 11, 18 121:1, 2 122:10, 18 123:17, 21, 22, 24 124:1, 2, 20, 21 125:3, 4, 8, 20, 23 126:10, 17, 20, 22, 24 127:14, 20 129:25 131:9, 15, 25 132:3 149:24 150:4, 8, 15 160:15, 17 201:23 256:4, 8, 13 258:12 265:15, 23 266:18 275:22 278:12 285:6, 9, 10, 13	183:16 caption 297:19 captured 87:16 189:5, 6, 7 carcinogen 149:25 150:3 carcinogens 270:18 cardiologist 45:13 53:7, 12 54:2 cardiologists 230:25 231:2 cardiology 46:17 49:19 54:14 cardiothoracic 211:1 care 9:9 42:7, 8, 13 44:10 45:3, 4 54:12 55:18, 19 56:7, 16 92:23 98:19 128:5, 6 136:23 142:10 155:25 156:25 157	

caught 124:20, 23	231:19	chance 205:15	CHARCHALI	cites 118:1, 2
causal 132:2	248:25 249:4	225:25	S 3:13	166:4, 10
causation	258:14	change 22:19,	charges 34:10	citing 83:24
74:19 82:23,	certainly	20 36:7 45:7	149:15 175:3,	Civil 297:6
24 84:8, 14	56:14 91:24	48:8 104:7, 9	4	claim 29:15,
86:5 89:13,	115:5 142:17	124:7 141:22	chart 200:1	23 258:7
22 109:17, 24	159:8 166:14	148:23 169:3	check 15:24	276:16
115:21	194:20 195:8,	182:12, 15	16:8 47:3	claims 29:10
128:24 131:8	15 202:8, 9	185:3, 9	226:17	135:14 145:1
cause 83:2, 4	265:16 266:8	220:19 273:5	245:13	224:1 231:10
85:2 89:25	certainty	295:3, 6, 9, 12,	255:12 281:10	clarification
90:1 131:9,	87:21 104:10	15, 18, 21	checked 16:6	211:12
15, 25 297:11,	126:6 127:16	changed 22:8,	chemotherapy	clarify 72:13
20	188:7 271:5	12, 22, 23	52:25 55:10	103:11
caution 63:23	Certification	101:7, 14	56:4, 13	128:12 174:7
caveat 56:15	5:20 74:3	102:3 184:8	58:14 61:20,	183:18 285:7
caveats 128:19	Certified 7:24	changes 152:4	23 62:15	289:19
CDER 251:5	138:4 188:16	182:10, 14	chest 104:25	Class 5:20
cells 58:19	297:3	210:16 236:6,	105:11, 13, 15,	40:11 74:1, 3,
Center 43:2,	certify 296:5	7 237:14, 21	16, 19, 23	4 88:11
19 44:4	297:7, 17	239:7, 10, 11,	155:23	129:3 135:14
49:24 197:4,	cetera 144:16	13, 15 294:10	Chimin 8:11	137:18, 22, 24
11 200:1, 11	Chain 249:23	296:9	choose 45:11	138:3, 7
250:19 251:1	250:5	changing 56:4	204:3	146:1, 2
centers 51:25	challenge	Chan's 62:23	choosing	149:3 164:4,
central 83:25	134:12	111:10 159:1	202:12	6, 7 168:10
106:4 224:5	challenged	268:11	chose 45:24	170:9, 11, 22
232:17 233:9	68:19, 22	chapter	211:25	171:13, 18, 20,
257:4 260:6	CHAN 1:17	261:23	chronic 154:24	21, 22 172:11,
269:10, 11	5:14, 16, 20,	262:15, 24	circle 146:1	20, 22, 23
Centre 3:20	23, 24, 25 6:1,	263:4, 7	circumstance	173:23
Century 3:8,	2 7:11, 22	264:14, 18	266:25	176:15, 22
14	8:4, 11 11:1	265:4, 5, 7	citation	177:6 178:15
certain 50:11	18:11, 19	characteristics	115:11	179:16, 17, 18
58:22 62:16	21:20 22:12	31:21 84:17	117:11, 15, 19	180:1, 7, 12,
64:25 83:15	24:15 34:25	106:7 125:19	163:25 262:7	13, 16, 20, 23
94:15, 16, 17	41:3 63:12,	127:1, 6	citations	181:3, 5
99:20 104:7,	22 66:21	168:9 169:19	114:17	187:8, 13, 18,
10 105:5, 6	67:5 72:20	201:9 224:3	cite 110:4	25 188:12, 13,
106:8, 13	77:9 107:14	characterize	114:12, 24	16, 25 189:2,
114:8 120:24	135:4 159:5	44:20 104:5	115:13 117:5	4, 5, 9 190:23
121:19	160:3 165:14	116:12	123:13	192:6, 14
124:20 140:1	188:19 205:2,	133:15 142:2	241:10, 11	193:13, 16
144:12 156:5	11 216:9	161:21	261:23	194:9 195:16
189:19, 21	225:16	162:17	cited 113:11,	196:7, 24
190:23	243:10 262:8	211:17 214:6,	15 115:17	198:17
193:14	281:18	17 217:4	119:23	199:22 290:5
194:25 196:7	286:11 288:5	characterized	161:23	291:14, 20, 24
198:4 218:20	289:9 290:8	224:18	164:21	classes 195:25
221:18	292:22	characterizing	276:13, 14	classwide
	296:14 297:8	105:7, 10		282:2

clear 88:5 116:24 170:20 199:1 clearly 256:22 Clemens 241:10, 17 clinic 144:1, 13, 25 145:6, 17 clinical 42:18 43:1 89:21 93:2, 3 103:7, 14, 19 125:21 155:10 244:15 285:9 clinically 45:24 89:11, 16 clinician 92:12 119:8 135:10 282:21 clinics 144:15 145:5 clipping 221:8, 22 close 45:23 59:17 203:14 243:23 281:10 closely 208:23 262:21 COAN 4:17 Coast 59:17 coasts 51:23 coauthors 101:23 211:20 242:9 code 15:25 16:11, 13 19:24 88:6, 19 143:15 221:23 222:2, 4, 6, 12, 13, 15 230:22, 25 244:12, 14 282:22 297:6 codes 143:21 221:15, 18, 24, 25 222:11 253:16 254:10, 12, 16, 24, 25 255:3	cognizant 104:14 colleague 243:11 247:1 colleagues 281:11 collected 86:16 collects 86:18 87:2 college 41:16 collegial 53:16 colon 120:10 122:10 colonoscopies 122:8 144:16 145:17, 18 221:21 285:16 colonoscopy 221:6, 8, 22 Colorectal 120:20, 21 121:1 123:10 160:14, 17 column 120:19 combination 182:21 come 26:21, 23, 24 27:20 33:18 37:18 55:25 63:3 105:10 153:11 168:10 171:5 195:4 228:12 237:21 comes 37:2 57:2 61:18 97:19 164:22 205:21 206:9 237:20, 22 comfortable 134:14 coming 39:21 50:14 158:25 216:8 236:16 comment 84:13 117:22 279:13 283:11 285:3 288:19, 21, 24	commenting 111:14 219:5 259:15 comments 242:11 288:10, 16 289:3 commercial 179:2 234:24 235:9 237:16 238:3, 8 239:9 240:16, 25 241:2, 23 246:22 247:4, 6, 13, 16 commercial-to- Medicare 192:21 193:5, 21 194:3 commit 51:6 committee 218:18, 19 222:10 231:8 237:13 common 205:21 206:8 209:3, 4, 9, 23, 25 266:11 284:6 288:18 community 52:5 comorbidities 56:20 201:15 comorbidity 203:20 company 146:10 190:13 226:7 comparable 229:1 compare 87:9 116:18 151:10, 11 180:9 compared 112:10 199:17 compares 194:19 219:6 comparing 200:5 208:6,	7 210:16 211:9 290:2 compensation 34:21 complaint 27:4, 18 30:4, 10, 11, 13 57:3 71:15 74:1, 5 86:9 129:6 148:19 171:9 172:2, 7 173:14, 17 complaints 49:18 64:22, 24, 25 65:18, 22 173:23 complete 89:5 completed 23:3 39:21 completely 7:17 221:4 complexity 139:24 149:17 compliance 257:20 258:1 265:25 266:5 complicated 62:2 149:12 151:13 152:3 184:13 comply 258:22 260:16 components 169:23 Comprehensive 98:15 214:7 concentration 85:16 concept 130:10 174:15 concepts 269:23, 24 concern 85:8 105:22 282:9, 14 concert 128:17 263:5, 6, 14 265:2, 4, 8	concluded 292:25 concludes 164:4 conclusion 27:13 150:11 155:14 161:11 164:16 171:25 173:1 203:8 208:24 239:2 241:21 242:1 255:24 268:4 conclusions 76:23 233:14 concordant 234:23 235:7 236:13 concrete 278:18 condition 55:23 154:24 269:3 conditioning 169:1 conditions 49:22 75:20, 23 189:20, 22 conduct 276:18, 20 conducted 250:1, 4 275:11 277:15 279:8, 11 conducting 276:7 conducts 86:21, 23 confer 290:11 confident 179:5 CONFIDENTI AL 1:12 64:4 65:11, 23 66:3, 25 67:2 134:11 136:8 confidentiality 64:1 65:24 66:13
--	--	---	---	---

confirm 291:18	consists 171:13	14 278:8 283:19	contributed 102:16, 20	271:14, 15 274:2 276:22
confused 149:5	Consolidated 73:25 74:4	contained 88:18 256:2, 12 267:8, 15	control 15:25 16:7, 18	291:15, 16 296:7 297:15
confusing 148:18 253:2	constraints 159:17	284:20 285:17	89:15 258:10	corrections 294:4, 6 296:9
Congress 184:8	construction 132:14 189:18	containing 110:9, 11	controlling 275:23	correctly 217:13
connection 77:19	consult 53:7, 11 54:24	contains 11:9 256:7 266:23	conversation 27:2	233:13 245:8
conservative 110:4 116:1, 17	55:12, 22	contaminated 83:1 85:1	conversations 26:7, 11	correlate 168:8
consider 54:1 56:19 62:1	56:2, 5	149:25	conversion 182:11	correlated 168:23 169:2
84:16 103:5, 18 108:17	consultant 24:21 54:20	198:12 199:5	convert 113:8, 16	correlates 169:18
119:13 125:3, 6 151:4	70:3 72:24	contamination 88:4 272:3	converted 115:3, 5	correspondence 242:13, 20
152:6 176:1	consultants 54:3	contemporaneo usly 245:18	copy 28:6	cosmetics 249:20 250:2
207:20 254:9	consultation 53:1	contend 177:10	core 83:22	cost 146:11
257:1 265:14, 17 273:8, 9	consulting 13:20 38:13, 16, 20 54:11	context 249:18 251:3	84:13 85:7, 24 274:21, 23	148:19, 22
288:2	70:9 71:22	260:24	Correct 11:11	169:21
consideration 56:19 118:15, 20 270:19	72:10 80:12	Conti 13:15	12:10 13:2	170:20
272:21	consume 268:9, 22	16:25 19:7	16:12 17:7	172:17 174:2, 9, 19, 20, 21
considerations 32:1 60:1	consumed 171:14, 19	29:16 30:8	18:4 20:15	175:3, 5, 12, 13, 15, 17, 25
105:6 118:16, 21 248:22, 23	254:5 278:8, 25	74:8 255:8, 17 259:13	23:4 25:16, 20 32:13	176:1 177:8, 23 190:3, 11
274:5	199:5 253:21	261:12 287:19	35:8 40:22	202:2 203:17, 20 236:24
considered 11:24 12:6, 23 19:15, 16	Consumer 6:2 261:13	continue 88:20 263:18	41:17, 21, 25	247:21
255:21 256:1, 11, 17, 24	262:20, 21	270:23 271:12	46:22 50:20	248:22
257:3 258:16, 21 287:5	263:8, 9	continued 43:7	64:15 68:4	259:19 260:3
considering 116:2 175:8	264:2, 6, 9, 16	Conti's 246:14 255:6	73:18 74:6	cost- effectiveness 277:9
258:8, 9, 12	265:7 287:15	258:6, 18	89:1, 24	costs 60:4, 16
considers 97:23 108:23	consumers 249:1, 9	261:8 263:24	100:9, 11	175:4 201:12
119:6	254:5 259:20	268:4 287:11	101:6 106:2, 17 114:5	249:8, 12
consistent 32:7 237:15	260:4 266:3	contract 146:6, 12	117:3, 10	260:7
239:8 244:15	275:20	contracting 151:10	119:20 121:5, 9 137:13	cough 120:9
287:21	contact 14:6, 11 23:22	contractors 153:6, 9	138:1, 5, 9, 10	Counsel 7:18
	24:6 25:25	contracts 151:7, 9	143:12 173:2, 7, 13 202:6, 19 216:20	173:6 255:17, 20 297:17
	26:3, 4, 10	169:22 260:19	233:20	counsel's 24:16
	69:18	contacted 23:21 25:22	239:22	counterfeit 251:15
	contain 270:17 273:7,	287:17	242:10	
		contrast 96:7, 8 171:21	247:14 254:8	
		172:23	255:5 258:23	
			259:14, 22	
			260:12, 14	
			266:10	

country 136:20 151:16 152:14 182:14 COUNTY 297:2 couple 184:18 course 13:11 99:20 101:17 120:2 123:21 156:19 189:5 COURT 1:1 7:9, 20 235:2 294:17 court- approved 95:15 courts 94:21, 25 95:5 Covariants 227:9 coverage 86:20 covered 18:12 190:7 248:20 CPT 143:15 221:15 222:10, 11, 12, 13, 15 230:22, 25 create 215:21 created 231:18 creating 232:1, 3, 5 creation 103:12, 19 172:14 243:12 criteria 112:4, 5 166:13 critiques 216:16, 19 217:23 crux 217:6 crystal 127:11 CSR 1:24 297:25 CT 97:2 104:20, 25 105:4, 11, 15, 17, 19, 22 114:2, 9	Culbertson 4:17 cumulative 129:5, 14 130:7, 9, 12 131:4 171:15 curable 57:23 cure 266:18 cures 265:14, 23 curious 244:4 current 151:15 257:21 258:2, 23 260:17 285:9 currently 51:16 97:11 114:2 136:12 142:16 147:13 curve 261:16 262:16, 20, 22 264:2, 3, 19, 21 273:11 286:25 curves 263:3 CV 39:6, 9 40:24 41:8 43:9 63:16 100:1, 24 250:16 CVS 3:4, 12 < D > D.C 2:10 3:3 144:3, 7 D.Stanoch@ka nner-law.com 2:7 damages 259:14 DANA 4:9 dangerous 234:3 Daniel 74:25 102:12 data 16:13 19:24 20:1, 2 21:14 22:12, 18, 19, 20, 22 75:25 76:1, 5,	8, 10, 20 86:10, 11, 13, 16, 18 87:2, 4, 25 137:11, 20 143:4, 8 146:15 147:10, 21 158:15 163:19, 20, 21 164:18 168:10 169:11, 14, 16, 17 177:7, 10 189:6, 7 191:5, 10, 17 192:22 193:5, 13, 15, 21, 23, 25 194:2, 5, 6, 7, 12, 22 196:7, 9 207:24 208:9, 11 212:15 214:16 215:25 217:7, 11 218:12 219:3, 7, 12 224:5, 6, 10 225:3 228:22 230:13, 15 231:21 233:8, 18, 19 234:2 240:15, 23 244:7, 9, 11, 14, 18, 20 259:13, 15 database 143:11 dataset 142:21 209:17 210:10, 12 211:16, 18, 25 228:15 229:11 230:6 231:8, 9, 11 234:1, 4 datasets 142:24 213:15 230:8, 9 231:15, 19 233:17	date 7:4 22:8 294:8 296:14 dated 20:22 77:16 78:18 297:21 dates 64:10 73:11 141:9 DAVID 1:17 2:4 5:16, 22 6:2 7:11, 22 8:11 292:22 296:14 297:8 day 36:8 51:15 247:1, 12 269:12 286:1, 12 297:21 days 294:14 Deaconess 43:2, 19 44:3 48:20 49:1, 13, 24 50:6, 15 52:2 deadline 78:25 deal 52:23 62:4 dealt 33:6 183:15 debate 217:10 218:11 decades 141:1 December 23:15, 19 25:18, 19 77:20 244:25 decide 26:12 220:22 236:22 282:6 decided 48:8 139:11 decides 48:2 240:2, 5, 6 deciding 94:14, 16 decision 53:1, 23 54:19, 24 56:4, 21, 22 62:2 201:22, 25 decisionmaker 53:24 55:7	decision- making 93:17 119:5, 9 218:21 decisions 52:24 61:21 128:8, 17 230:20 233:9 Declarations 75:15 deemed 294:16 deeper 151:13 defend 157:9 217:2 Defendant 3:1, 4, 15 4:1, 16 273:15 Defendants 2:15 3:12 4:4 64:11 68:6, 9, 10 171:17 252:13, 21 253:5, 18 254:3 271:17 272:4 273:21 defended 157:17 define 55:20 88:6 121:4, 7, 15 160:13 175:8 177:12, 17 179:25 189:3 221:3, 9 251:22 defined 138:7 149:18 158:10 164:6 174:16 defines 130:13 131:5 defining 189:2 206:15 definitely 159:9 definition 46:5 120:4 124:6 129:3 138:8 185:5 198:16 229:2
---	--	--	---	--

233:17, 21 277:25 290:5, 23 definitively 58:25 degree 39:14, 15, 16 113:4 114:8 degrees 15:10 39:2, 20 40:21 41:20 79:15 delaying 184:19 delineated 274:9 delivered 282:7 delta 192:16 delve 148:21 demand 261:7, 14, 16 262:16, 22 263:3 264:2 273:10, 11 286:25 287:1, 16, 17 291:1 demographics 86:21 demonstrate 115:15 191:6 demonstrated 83:13 147:1 270:16 demonstrates 137:12 denominator 232:3 denote 227:24 department 45:2 139:4 155:12 depend 66:19 127:1 190:16 237:18 264:3 266:25 268:15, 17, 25 depending 124:7 139:7 152:5 224:19	depends 53:20 57:20 61:8 62:11 89:4 118:15, 17 123:18, 20 151:7, 8 152:4 166:25 170:21 190:9 197:6, 9 200:2, 4, 7 203:15 236:4 237:17, 20, 25 238:18 241:19 268:18, 19 269:24 279:19 289:21 deponent 7:11 296:1 deposed 8:12 25:12 72:4 deposing 294:13 deposit 245:13, 14 Deposition 5:14 7:6, 12 9:22 10:4, 19 12:16 13:8, 10, 12 16:21 17:4, 17 19:5 20:7, 17 21:1 24:13 25:7 36:7 63:14 68:2, 3 72:12 78:12, 13 124:16 215:13 232:20 275:9, 19 276:5 289:22 291:22 292:7, 25 294:3, 11, 14, 16 297:9, 19, 21 depositions 9:16, 17 75:14, 15 135:17 depth 155:11	derivation 103:6, 9 describe 49:11 129:24 167:24 234:1, 2 246:22 254:15 269:15, 19, 21, 22 described 71:14 226:7 229:15 230:12 276:10 287:21 describes 166:21 201:9 describing 232:24 233:2 DESCRIPTIO N 5:13 233:5 descriptive 89:19 233:3 design 87:19 221:14 designated 25:6 despite 51:23 detail 21:21 22:5 160:6, 16 162:16 164:14 166:1 167:6, 9 252:18 275:18 276:4 detailed 124:12 132:19 160:19 163:9 191:17 201:13 details 65:18 131:17 146:6 272:6 detect 58:16, 18 59:20 123:24 detectable 58:10, 12 124:3 detecting 58:17 60:17	detection 109:1 determine 26:21, 24 147:9 156:13 164:18 169:19 170:13 176:21, 25 177:5, 22 178:17 187:22 190:21 199:4 204:6 209:5 224:11 244:9 254:21 255:7 274:10, 19 277:16 282:22 291:19 292:4 determined 48:1 169:6 185:7 188:6, 14, 22 224:3 determining 209:16 213:2, 7 277:20 288:2 develop 217:5 developing 99:19 149:24 150:4 development 98:21, 22 99:4, 9, 10 102:17 138:14, 21 deviate 223:5 deviation 156:24 224:6, 13, 17 227:5, 7, 23 228:4, 21 229:2, 3, 5 239:24 deviations 224:23 deviation's 228:5 Devices 250:20	diabetes 87:25 88:22, 24 diagnose 125:8 126:19 128:8 155:3, 18, 20 diagnosed 57:2, 7, 10 126:10 diagnoses 91:11, 15, 16, 20, 22 92:3, 14 93:6, 13, 20 94:18 153:23 154:19 155:6 diagnosing 56:24 91:25 diagnosis 56:9 57:5 91:14 92:17 93:14 125:19 126:17 154:22 155:16 diagnostic 91:12 92:24 93:4, 5, 16, 18 153:25 154:2 155:20, 22 dialysis 152:19 Diana 102:13 Dickstein 6:2 242:7 dietary 85:10, 17 130:3 differ 60:21 70:22 136:20, 25 179:6 189:9 255:14 274:4 284:13 difference 49:25 50:7 52:10 79:18 109:2 139:7 175:3, 4 179:22 192:16 212:22, 23 236:3, 21 257:11, 17
---	--	--	--	--

differences 140:8 201:6	differential 204:7, 9	discuss 21:13 64:8 65:19	190:3, 11	Document 1:9
different 13:23 36:12	differentiate 274:5	86:10 96:9	distance 232:7	11:4, 5, 6, 10
49:4, 5, 15, 22	differing 179:9	103:1 104:12	distant 57:16	12:12 15:25
50:2 51:23,	differs 235:21	105:5 107:4	distinct 158:3	16:10 167:13
25 52:3	difficult 66:21	160:7 187:3	distinction 173:16, 17	205:14
60:21, 22	130:6 151:18	206:14	distinguishes 200:16, 18	documents 10:1 11:12,
62:1 71:8, 13	292:8	discussed 18:8, 16, 23	distributed 197:23, 25	15, 19, 21
78:1 89:15	difficulties 242:15	19:3, 8, 10	198:1	12:15 13:3
111:20 112:4	dig 155:10	70:18 85:11	distribution 198:9 200:7	17:3 18:16,
114:1 118:16	dimension 237:25	96:14, 25	203:10, 11, 12,	21, 23 19:3
119:6, 13	dimensions 196:4	97:1 109:17	15, 16 207:20	27:18, 22
120:17 127:7	direct 83:7	117:1 120:20	212:16 213:9	28:4 29:24,
129:25 130:1	86:8 96:2	147:20 163:7	214:8, 9, 11,	25 30:2, 18,
137:1, 9	99:24 106:18	171:8 173:18	14, 17 215:3,	19, 21, 25
138:8 140:2	107:17, 20	discussing 21:14 247:1,	11, 14, 17	31:10 32:7,
147:6 151:10	168:13	11 249:18	229:4 289:1	11 64:22
153:10, 20	186:25	261:6 279:24	distributions 198:2 214:6,	doing 45:3, 9
154:4 158:5,	249:19, 22	discussion 22:3 27:5, 12	25 229:1	86:15 89:8
12 168:4	directed 27:25 31:5	151:25	DISTRICT 1:1, 2 7:9	142:14 149:2
169:9, 23	33:1 76:9, 19	177:19	divide 228:4,	155:22
175:7 177:2	87:4	206:17	20 229:3	209:14
178:21	directing 61:22	207:18 208:3	dividing 227:23 232:2	210:13
182:14 188:1	direction 177:3 239:11	212:19	DIVISION 1:3	211:18
189:12, 22, 23,	297:14	234:19	divulge 66:25	232:13, 24
25 190:4	directly 34:20	242:16 263:7	divulging 134:10	294:7
191:7 192:12	35:23 41:16	267:11 274:8	Dklinges@dua	dollar 210:22
195:15, 19	52:6 210:8	discussions 21:22 22:14	nemorris.com	dollars 153:2,
196:3 199:13	249:17 259:1	79:25 177:10	4:13	5 182:11
202:13 204:3,	disability 152:17	247:23	doc 184:15	domain 54:17
4 207:19, 22	disclose 18:22	disease 45:14	doctor 9:7	135:24
210:14, 19	142:5 248:7	49:18 58:21	45:11, 14, 20,	domains 93:16
212:16, 19	disclosed 24:21 72:11,	155:7 201:19	22, 24 52:5	dosage 114:4
214:5, 13, 17	22 73:2, 8	diseases 84:17	56:17 68:13	131:18
220:4, 22	disclosures 24:23	86:21 90:24	109:22 116:8	dose 105:12
221:12, 15, 17,	discover 271:3, 7	91:3	171:3 246:11	110:6 115:2
20 222:11	discrepancies 211:5, 7	disinterested 297:13	285:21	116:2 282:8
223:6 224:20	discrepancy 210:14, 15, 19	dispensed 253:16	290:19 291:9	doubled 182:16
228:19		259:21 282:7,	292:19	download 143:4, 8
232:22 234:6		23	doctors 52:8	downsides 60:7
235:22		disproportionat e 223:3	197:10, 12	Dr 5:16 7:11
253:24 255:9		dispute 226:20	246:24	8:4 16:24, 25
265:2 269:1,		disregard	doctrine 18:13	18:11, 19
6, 23 273:16,				19:7 21:20
21 274:6				22:12 24:15
275:21				29:12, 16
277:12 278:5,				30:8 34:25
14, 15 280:7,				62:23 63:12,
14 284:8				
291:24				

22 66:21 67:5 72:20 74:8, 9, 11, 23, 25 75:2, 8 107:14 111:10 121:11 123:5 132:22 133:1 135:4 148:15, 21 159:1, 5 160:3 161:7, 12 162:2, 10, 21 165:11 167:14 169:9 187:3 188:19 194:6, 15 195:11 201:13 205:2 243:10 246:14 255:6, 8, 17 258:6, 18 259:13 261:8, 12 263:24 268:4, 11 281:18 286:11 287:11, 19 288:5 289:9, 16, 25 290:8 292:22 drafting 255:18 drastically 182:15 draw 112:12 171:2, 4, 6 205:25 drawbacks 60:16 drew 165:7 drive 22:10 38:6 drug 248:17, 22 249:16, 20, 23 250:1, 5, 9 251:1, 10, 11 260:16 261:19 262:18, 25 266:21 267:2, 4, 24 268:2, 3,	21 269:5, 13, 14 270:3, 4, 8, 11 271:4 272:11, 14, 21 273:1 275:12 276:8 277:7, 17, 21 278:8 279:12 281:7 282:16 283:23, 24 drugs 130:2 158:17 171:16 199:5 247:22 248:14, 20 249:1, 5, 8, 12, 18 250:12 251:12, 15, 18 254:4, 9, 11, 13 255:2 259:11 265:3, 8 268:7, 8, 9, 23 271:12 272:10 276:12 282:22 283:5, 14, 15, 21, 22 284:4, 7, 9, 13, 14 drug's 274:20 276:21 279:9 Duane 4:10 Due 7:15 251:25 256:4, 8 duly 7:24 297:4, 10 duties 51:19 < E > earlier 58:7 69:20 70:18 71:14 73:15 74:7 76:14 109:25 114:3 115:21 117:13 121:21 148:6 176:18 204:2 215:12 232:20	247:24 271:2 289:13 early 58:1, 6 59:4 79:25 109:1 124:20, 23 easier 62:7 198:20 East 3:8, 14 48:21 59:17 Eastern 63:4 eat 62:21 159:5, 9 economic 13:20 74:4 100:13 101:1 171:21 172:23 241:9 248:25 249:4 259:11 260:9 261:13, 14, 17, 22 262:17, 21 263:1 265:5, 19 269:17 276:18 277:11 279:19 281:6 287:8, 15, 16, 19, 21, 23 288:2, 3 291:3 economics 15:10, 13 39:18, 20 40:1, 3, 14 42:16 79:17 92:13, 22 102:14 225:22 228:13 233:10 263:1 265:6 274:17 286:17 287:6 economist 12:14 29:15 39:1 68:14 80:3, 7 92:7, 12 135:9 150:21 151:2 214:2, 3 263:23, 25	economists 102:6, 11, 12 251:8 263:24 editor 216:17 educated 125:1 126:1, 7 educating 44:3 education 284:2, 6 educational 39:3 effect 132:3 278:18 effects 251:10 efficacy 248:23 efficiency 93:4 effort 176:21 178:13 190:21 efforts 178:16 187:21 eight 47:19 226:13 either 10:9 45:12 48:14 82:3 149:14 160:22 189:6 297:18 elaborate 37:5 elaborates 108:12 ELAINA 1:24 7:20 297:3, 25 element 269:11 elements 84:19 Eligibility 203:1, 2 eligible 152:13, 16, 21, 23 Ellman 14:8 15:6 23:22 26:1, 2, 6 76:17 80:4, 5 e-mail 26:4 emergency 45:2 139:4 155:12 emphasis 207:23	empirical 101:15 employ 140:2 employee 70:4, 10 endeavored 276:20 277:5 ended 45:8 219:20 endogenous 130:3 ends 197:5 200:14 engage 251:6 engagements 64:5 England 39:19, 25 205:6, 13 216:7 242:19 288:6 289:2 enrolled 39:15, 25 ensure 7:16 251:12 entail 175:9 entire 11:5 170:6 179:20 203:10 214:8 218:17 243:16 244:17 entirely 217:24 221:13 entirety 136:9 epidemiology 82:23 84:7, 14, 16, 20, 25 114:13, 18 125:7, 18 127:7 equation 227:21 229:15, 20, 23 231:13, 14, 25 232:6, 11 equilibrium 287:9, 24 290:20, 23, 25 291:3 era 50:12, 13
--	---	---	--	--

<p>errata 294:6, 7, 10, 13 295:1 296:10 error 93:18 155:16 156:1 errors 16:11 92:19, 24, 25 93:5 esophageal 123:11 especially 179:16 ESQ 2:4, 7, 9, 13, 18, 20 3:2, 4, 13, 15, 19 4:2, 7, 9, 10, 17 essentially 27:23 establishment 98:22 99:4 estimate 78:20 109:25 110:4 115:25 116:18 186:6 192:5 223:18 238:3, 8, 20 estimated 110:6 192:9 estimates 85:19 187:4 217:5, 6 218:19 estimating 148:16, 25 238:23 estimation 217:12, 16, 18 218:3, 7, 12, 25 219:2, 5, 6, 25 et 5:23, 25 144:16 Etminan 74:23 Euclidean 232:7 evaluate 120:10 182:22 243:23 evaluated 244:17</p>	<p>evaluating 169:23 Evaluation 251:1 276:18, 21 event 278:13 events 9:1 252:9 281:3 eventually 184:17 252:5, 11 255:2 everybody 180:22 Evidence 6:1 97:23 98:2 99:19 104:7, 8, 9 105:21 108:3 124:10 127:17 177:3 179:11 188:8 266:9 270:15, 20 284:25 291:23 evidence-based 102:20 103:1 evolve 28:12 exact 23:18 236:10 252:9 277:10 exactly 16:1 17:19 19:9 23:18 25:10 30:12, 24 80:6 87:17 100:15 133:14 139:23 141:19 146:21 178:8 190:14 219:16 228:3 233:18, 20 236:13 237:6 274:3 279:3 283:23 284:9, 11 EXAMINATIO N 8:2 246:9 286:9 290:17 291:7</p>	<p>EXAMINATIO NS 5:1, 3 examined 7:25 example 16:1, 5 55:23 61:3 85:19 95:23 96:18 104:19 110:3 112:24 124:21 125:9 132:21 142:24 144:1, 5, 20 158:4 180:2, 25 182:15 184:15 193:13 198:6 203:11 207:10 210:23 215:1 221:6 223:1 237:1 263:5 265:22 examples 123:14 145:3 157:15 ex-ante 269:19, 21 270:5, 12 272:11 273:3, 5, 13, 16, 19, 21, 24 274:8, 20 275:2, 13 276:1, 8, 21 277:6, 16, 20 279:12 excess 110:17 exclude 69:2 excluding 120:2 executive 139:17 141:11, 13 exercise 212:1, 5 Exhibit 5:14, 16, 20, 24 6:1, 2 10:24 11:1, 9 12:2 41:2, 3 73:22 77:9 165:13, 14 168:16, 19</p>	<p>205:5, 10, 11 210:4, 7 216:6, 9 225:15, 16 234:13, 14, 16, 17 260:25 262:2, 4, 7, 8, 11 287:12 288:7, 12 EXHIBITS 5:12 10:16, 20 16:14 179:1 197:20 210:5 exist 136:1, 5, 6 144:23 193:23 194:12 223:21, 22 224:6 261:15 264:10 287:16 existed 255:4 existing 238:7 exists 168:11 194:4 268:5 expand 253:25 expanded 28:24 29:5 expect 16:15 80:21 109:12 157:12 189:21, 24 expectancy 58:23 124:5 127:21 201:20 expectation 283:3, 14, 18 expected 110:8, 10 280:5, 22, 23 Expenditure 76:5 experience 15:9 80:11, 12 90:3, 6, 17 93:23 94:3 176:16 187:14 experienced 80:11 176:14, 22, 24 178:15,</p>	<p>16 187:13, 18, 21 190:22 EXPERT 1:16 5:14, 16 24:18 25:6 37:2 64:11 68:23 70:23 72:6, 10, 14, 22 73:3, 8, 16 74:15, 19 103:6, 18 116:25 125:3 131:8 161:12 247:24 248:2 257:10, 13 expertise 12:13 29:14 52:14 68:13 69:1 128:3 135:9 142:18 150:19, 22 244:16 260:9 experts 16:23 19:6 30:6 128:18 133:6 expired 252:14, 21 253:5, 9, 10, 12, 20 explain 92:6 214:23 286:17 explicitly 172:21, 24 explore 133:23 exposed 110:8, 10 ex-post 269:20, 22 270:8 277:23, 25 278:1, 19 279:4, 9 exposure 44:18 83:11 110:14 130:13 131:5 exposures 117:21 extensive 16:7 extent 11:14 64:6 84:10 111:9 114:22</p>
---	---	---	--	---

116:10 130:15, 20 145:9 150:10 156:8 161:11 173:11 176:21 224:2 225:6, 7, 9 243:23 268:10 extrapolate 234:3, 5 < F > faced 140:9 facing 191:9 fact 51:23 117:18 178:21 189:18 203:19 258:20 273:6 291:19, 21 292:3 factor 107:24 108:8 109:14 179:15 182:11 factors 62:1 107:22 109:9 111:16, 20, 22, 23 112:2 119:7, 13 120:18 160:7 274:9, 19 facts 27:16 130:15, 21 164:14 faculty 40:4 100:24, 25 fail 294:15 fails 108:4 failure 152:19 189:17 198:23 200:17, 20, 21 201:1, 11, 15, 19 202:7, 10, 11, 14 203:19 258:11 275:24 fair 8:22 9:14 12:20 27:1 36:19 46:4 52:15	84:6 93:8 98:21, 24 99:3 106:16 115:7, 11 118:7 127:9, 15 133:11 136:19, 25 137:14 149:7 156:3 157:5 169:25 173:22 174:1 176:20 192:20 197:3 199:21 205:19 206:7 208:25 216:22 217:15 218:3 220:2, 18 222:6 233:7 234:22 235:6 237:12 238:1, 15 239:2, 3, 6, 10 240:11, 22 241:1 257:7, 14 259:1, 4 278:17, 20 fairly 16:16 49:14 166:1 fall 199:6, 25 238:9 247:3, 12 falls 31:24 190:5 200:11 false 105:8, 9 106:6 122:14, 18, 19 familiar 98:14 128:5, 19 129:12 135:10 151:9 184:2 familiarity 184:5, 11 family 113:4 far 178:17 181:19 184:25 187:22, 23 196:12 264:1	farther 182:4, 17 183:2 fashion 174:4, 7 182:1 184:24 243:19 faulty 261:12 favor 248:21 FDA 85:19 110:6 114:24 115:10, 25 250:7, 14 251:17 252:22 253:19 255:10, 22 256:17, 24 257:2, 3 258:15 270:22 271:11, 19 272:2, 9 282:1 FDA's 250:12 253:5, 22 254:1, 21 feasible 129:22 169:10, 13 189:4 192:18 199:7 February 77:16 78:16 245:2 fecal 122:8 federal 87:3 139:14 147:16 183:20, 22 240:2, 5, 6 Fee 5:22, 25 33:19 220:13 223:5 240:9 Feel 217:22 fees 33:19 34:1, 9 35:6 Fellow 100:25 251:4 fellowship 40:13 45:12 FHS@pietragal lo.com 3:22	fibrillation 99:17 101:13, 16 154:4, 6, 13, 17, 20, 21, 23 155:2 fibrillation's 154:24 fictional 144:20 145:6, 12 field 161:18 Figueroa 4:11 figure 22:7 37:12 39:10 62:20 97:5, 6 111:18, 19 113:1, 2, 24, 25 116:20 120:15, 17, 19 122:4 141:19 142:25 143:6 146:18 160:7 179:2 210:7, 13, 18 211:4, 13, 18 221:14 227:14, 15 235:12, 14, 23 237:19 255:13 277:21 figures 179:2, 15 file 36:15 205:5 filed 64:18, 22, 23 65:2, 22 film 105:18 final 76:24 finality 169:7 finalized 20:21 22:20 finalizing 20:14 finally 138:3 227:20 finance 172:14 find 11:17 23:2 27:25 31:5 57:3, 4 65:3 113:17 127:8 160:20,	22 163:25 270:6 finding 57:25 147:4 208:15 findings 240:11, 14, 22 fine 9:14 59:15 62:22 67:11 159:15 167:21, 22 finish 41:20 281:10 finished 40:2 42:14 44:6 71:4, 5 finishing 40:1 207:12 finite 177:18 Fink 79:22, 23 firm 13:21 first 7:24 24:6 26:4 29:19, 20 39:14 40:4 42:17 43:1 44:2, 13 69:18 73:6 78:4 79:4 100:23 113:4 131:24 138:13 140:14 142:20 169:1 170:25 173:24, 25 174:16 175:9 188:12 189:2 198:16 211:24 213:24 214:11, 20 227:19 228:5 229:18 231:15 271:10 286:16 fit 152:7, 11 fits 212:11 five 59:13 147:4 159:20 227:8
--	---	--	--	--

five-minute 243:2	footnotes 114:13	164:10	76:17 81:22	future 127:4, 10 141:4
fix 184:15	Force 97:18, 21, 22	167:16	101:24 102:8	178:4 181:22
fixed 29:4	forces 250:8	173:11 174:5, 23 184:1	122:25	182:5 183:22,
202:2 203:20	foregoing 296:6 297:9, 19	192:24 193:7	fourth 72:5	25 184:7, 12
Fixing 100:8	foregone 208:23	197:8 203:22	fraction 232:4	280:6, 25
flexibility 51:5	foresight 127:4, 9, 12	205:23	fractions 232:4, 5	281:3
flexible 51:4	forget 25:22	206:11 209:7	fragile 215:2	
flip 261:3	forgive 10:13	216:16 218:5, 19 224:22	framework 108:17, 23	< G >
Floor 2:14	form 13:11	232:18	117:23 118:6	gaps 138:20
3:21 4:18	form 14:18 15:3	233:11 235:1	259:5, 8, 17	gasoline 156:6, 14, 16
130:13 131:5, 6, 10, 11, 19	26:15 28:13, 25 30:22	238:11	261:7 278:22	gastroenterolog y 49:20
132:11, 15	32:19 33:4, 21 40:12	240:17	FRANK 3:15	gather 30:20
flux 29:21	52:16 57:19	252:23	17:10 22:6	32:11 76:9
focus 61:7	58:2 59:22	255:23 259:3	34:19, 23	gathered 76:8
98:23 99:5, 11 101:14, 15	62:10 63:23	271:21 275:5	35:17 65:16	gathering 32:17 33:2
115:22	68:16 69:9	282:4, 17	67:13 76:18	211:15
150:22 155:7	70:5, 24	283:16	130:17 134:2	Gcoan@hinsha wlaw.com 4:19
190:10 196:9	71:11 78:1	284:22	135:20 276:25	GEMAN 2:13
214:9, 10	79:11 83:20	286:19	Frean 14:9	general 19:4
263:5 285:10	84:9 85:3	289:18 296:9	15:12 76:16	30:25 43:24
focused 92:1, 2, 22 93:9, 11	86:3 90:9	formal 46:11	81:16, 17	45:14, 16
99:11, 15, 16	91:8 92:10	216:15	free 16:10, 11	46:6, 13, 16
226:4	94:22 95:8, 18 98:25	forming 11:20	184:23 217:22	49:14 52:10, 20, 22 53:4
focuses 148:16 226:6	99:8 101:18	17:2 19:15	frequency 282:9	54:8, 16, 23
focusing 148:25 196:6	103:22 104:3, 22 109:21	forms 189:22, 23 190:4	282:9	56:16, 25
211:6	111:6 114:21	217:4 286:24	frequently 57:17 213:7	61:15, 25
folder 10:15, 20 165:12	116:9 121:13	formula 184:22	full 8:8 47:2, 3, 4 138:17	66:12 67:8
folders 16:12	127:14 129:7, 18 130:14, 20	formularies 248:11	full-time 47:4, 13	71:15, 20
follow 86:22	133:13	formulate 233:8	32:5	74:19 82:23, 24 83:12, 16
150:5 208:23	137:16	formulation 103:6, 9	54:17 189:6, 7 224:2	84:8, 14 86:5
following 61:21 117:20	141:25 145:8, 20 147:11	forth 8:1	fumble 10:13	92:5 108:17
123:9	149:10	130:12 131:4, 17 199:9	fund 153:16	109:17
follows 235:5	150:24	forward 74:19 181:21	172:14	125:17 126:6
284:12	151:21	forwarded 10:9	funded 153:4	128:3, 24
follow-up 286:2, 14	153:12	found 87:24	funds 153:1	132:21, 23
food 249:20	154:14 156:7	120:14 160:25	further 29:9	134:5, 9, 10
250:1	157:6, 18	four 17:20, 21	75:25 120:10	136:21 137:3, 7 138:13
footnote 117:7, 16	161:10, 19	21:10 46:25	172:11 201:2	139:5 143:1
147:23	162:4, 14	47:17, 21	242:12 278:9	144:14, 19
164:24		48:10, 17, 18	285:22 290:9	145:2 158:9
254:18 262:7		73:9 75:18	291:6 292:18, 20 297:17	193:19 206:4
			furthermore 138:17	210:20 217:5

239:12 263:2 265:5 271:3, 6, 9 290:2 generalist 46:4 52:15 generalists 56:22 57:6 generally 45:17 48:5, 9 51:10, 14 55:12 56:2 58:12 59:19 60:20 61:19 65:9 151:16 206:2 235:17 237:7 240:14, 23 257:14 283:2 General's 136:18 generic 171:16 248:14, 17, 20 249:1, 4, 8, 12, 16, 18 250:9, 12 266:21 267:2, 4, 8, 15, 18 275:12 276:8, 11, 21 277:7, 17 279:9 282:10, 15 283:4, 14, 23 284:4, 7, 9, 13, 15, 19 generics 248:16 generous 237:10 GEOFFREY 4:17 geographic 182:13 195:2, 3, 20, 22 geography 191:19, 22 195:5, 6 196:4 222:16 223:9 224:19 getting 54:14 76:12 122:13, 18 146:5, 9	157:22 205:8 221:10 260:23 275:22 289:23 291:25 GI 144:19 give 8:17, 19 18:18 21:15 22:1 24:15 37:11 58:13 84:22 92:8 115:11 125:15 126:25 134:9, 18 144:4 146:11 149:20 151:19 152:7 153:2 157:15 158:6 223:19 225:25 given 29:14 78:24 85:20 89:11 110:24 119:9 125:8, 10, 19 176:12 179:23 184:8 185:11, 13 187:10, 17 201:21 208:8, 16 209:22 212:8 218:25 219:25 222:9, 15, 16 280:6, 23 296:7 giving 124:21 144:20 157:24 177:21 Glad 226:25 glass 266:23 267:9, 15 glass- contaminated 267:18 glasses 227:1 GLENN 2:18 17:12 go 8:15 9:5 14:14, 19 21:21 22:4 26:16 30:23	39:8, 9 41:19 45:12 58:3 59:24 60:10, 23, 24 84:11 101:10 103:23 107:4 111:11 114:23 116:11 121:14 130:16 131:22 133:22 135:19, 21 136:22 139:24 144:9 150:12 154:9 159:21 160:5 161:3 162:25 168:15 173:15 175:23 191:4 205:7 206:19 207:6, 16 218:20 223:23 229:20, 23, 24 238:10, 13 243:2 263:17 265:10 274:18 275:2 276:25 277:3 281:9 283:17 285:1, 24 286:21 289:8 290:10 goal 38:2 89:24 217:3 218:17 goes 34:20 91:13 237:1, 3 240:8 going 8:18, 19, 21 9:5 10:12, 14, 15, 16 11:8 18:9 21:20 22:4, 15 35:20 37:23 51:9 54:1 56:17 59:9 62:21	66:19, 20 76:4 96:5 106:11, 23 119:21 120:5 124:24 125:23 127:10 136:17 140:4 141:4 144:4 145:18 154:18 160:10 162:15 163:1, 5, 24, 25 165:10 166:8 168:8 177:13 178:4 181:12 182:6, 8, 25 186:22, 23, 25 197:7 205:4 217:19 218:9, 20 225:12, 14 228:21 229:4 230:2 234:8, 11 235:18 236:24 243:1 246:13 247:25 262:1, 6 282:23 286:13 287:13 Golkow 7:3 Good 8:4, 10 59:9, 10 86:15 107:1 149:13 204:17 219:15 220:20 246:11 257:21 258:2, 23 260:17 264:10 265:25 266:5, 13, 14, 15, 19 286:11 Gordon 3:19 gotten 123:25 124:1 Gottlieb 241:11, 17	government 87:3 138:25 139:11 140:12, 13 152:25 153:1, 9 156:4 170:1, 12 183:14, 20, 21, 23 185:10, 14 240:2, 5, 6 government- run 153:4 governs 64:1 Grant 3:21 granular 195:18 graph 236:25 Great 8:24 10:3, 22 41:12, 13 77:12 107:13 122:3 125:12 141:24 142:2 205:18 225:24 251:2 252:18 275:18 greater 89:3, 7 Greenberg 2:20 117:9 ground 8:15 Group 13:18, 19, 20 14:4, 5, 25 15:17, 23 16:3, 8 19:21, 22 20:5, 8, 24 21:7, 23 22:4, 14 23:23, 25 24:2, 7 25:15, 24 26:1, 10 27:23 28:3 30:19 32:11, 15, 25 33:7, 14 34:10 35:6, 13 48:2, 8 52:8 69:22 70:2, 7, 10, 11, 14 76:9, 14, 19 82:18 94:1, 11 100:17, 19
---	---	---	---	--

120:1 243:21 251:8 groups 179:6 guarantee 200:6 283:22 guess 15:20 31:24 96:6 100:22 125:2 126:1, 7 131:14 133:7 174:25 227:17 245:18 255:6 263:23 277:22 guideline 33:12 97:3 102:17 104:8, 11, 16, 17, 21 106:16 107:25 108:9 111:17 112:3 119:11 guidelines 31:17, 25 95:6 96:9, 14, 17, 23 97:19, 24 98:12, 23 99:5, 10, 12, 14, 16, 19, 23 100:8 101:18, 19, 22 103:7, 14, 19 104:2, 13 108:15 112:19 119:19, 23 120:22, 24 154:5, 22 < H > half 47:6, 13 203:12, 13, 14 hand 234:2 290:5 291:14, 20 handle 53:6 hands 253:11 handy 228:12 Hang 21:19 116:8 173:9 188:19 191:2 205:8	happen 51:12 141:4, 5 happened 138:22 happens 56:25 57:6 125:7, 18, 20 240:5, 7 264:12 hard 55:20 60:19 69:11 123:25 124:13 168:16 225:8 237:5 277:8 harder 58:23 61:14 harm 122:12, 19 harmful 122:21 harms 109:3 268:2 269:14 hazardous 117:20 HCPCS 143:15 HCPS 143:15 head 78:23, 25 80:1 health 12:14 15:13 33:10, 12 39:17, 20 40:15 44:10 86:19 135:11 226:4 244:16 246:23 247:4, 6, 13, 16 250:20 275:21 277:12 279:5 Healthcare 4:7 33:9 69:8, 12, 15 86:19 141:3 142:3 150:21, 23 151:16, 17 152:5 153:14 197:17, 18, 20, 23 214:2 233:10 248:9	healthy 96:10 202:11 hear 130:17, 23 heard 7:17 75:4, 5 98:16 139:19 267:1, 4 heart 189:17 198:22 200:17, 20, 21 201:1, 11, 15, 19 202:7, 10, 11, 14 203:19 258:11 275:24 Hecht 74:23 Heimann 2:13 held 7:6 help 33:8 53:8, 12 helped 243:18 helpful 31:1 54:24 146:1 hereinafter 8:1 Hetero 4:1 Hey 204:15 hick-picks 143:17, 18, 20 hide 39:11 high 22:2 65:9 97:22 107:24 108:8 109:13 112:1, 5, 9, 12 118:24 122:17 135:5, 8 136:21 171:14 188:8 higher 85:11 104:15 105:22 111:24 113:10, 14 114:4, 5, 6 137:3 150:4, 15 155:21 223:6 235:18, 19 236:1, 9, 10, 20 237:7, 8	highest 110:6 115:1 116:2, 18 highlighted 231:14 highly 121:11 265:2 Hill 4:2 HILTON 2:4 5:5, 7 159:21 246:10, 12 253:1 256:21 257:5 259:7 262:1, 4, 6, 10 267:13 268:16 269:7 271:24 275:10 277:14 281:9, 17 282:13 283:1, 12 284:1 285:4, 21 286:19 289:18 290:10, 18 291:6 hinges 258:20 Hinshaw 4:17 hired 25:19 histogram 197:4 200:1 histologies 127:7 history 39:3 97:11 104:24 105:3 113:5, 13 121:2 160:13 hold 141:18 holistic 56:22 homogenous 51:24 HON 1:8 hopefully 165:11, 19 Hospital 39:23 42:6, 23, 24 43:20, 23, 24 47:12 49:23 50:1 53:3, 20 56:1,	6 61:18 137:7, 8 138:13, 18 139:25 140:2 144:1, 6 145:2 193:14 204:10 223:2 hospitalist 45:25 46:1, 2, 3, 5 47:4, 7, 15, 17 51:20 53:14 90:5, 22, 23 91:6 128:4, 14, 15 282:5, 21 285:11 hospitalists 46:12, 13 47:2 48:2 hospitalization 46:18 62:4 hospitals 43:8 48:21 49:4 132:22 137:1 138:15, 25 139:12, 13 140:14 142:5 143:7 147:20 149:15 hour 34:5 59:10 106:24 hourly 36:6, 9, 10 hours 17:24, 25 21:10, 11 38:7, 13 79:1, 7 82:17, 18 152:8, 12 159:20 167:9 House 250:23 houses 222:10 How's 245:9 HP 143:15 Huahai 4:4, 7 Hudson 2:14 huge 139:9 140:8 147:5 237:3 huh 177:25 human 91:13 155:24
--	---	---	---	--

humans 115:15	identify 167:13 217:4	important 84:20 93:16,	247:19	individually 178:9
hundred 45:18, 19, 23 49:2 52:9 127:16 166:10 222:23 238:22 271:5	254:10 283:21	18 94:14	257:20 258:1	individuals 14:16 19:21 87:25 88:23 171:13, 18 243:17 279:21
hundredfold 139:6	identifying 71:16 91:15 117:4	118:20 207:25 208:4 238:5 270:1 278:4	284:15 292:12	Industries 2:18
hungry 159:4	identities 231:7	importantly 116:21 155:19	income 37:1, 5, 14, 17, 22, 23, 24 197:12, 15, 21 215:1	Industry 6:1 80:11 141:3 156:4
hypertension 189:17 198:23 200:17 275:23	identity 231:6	impose 222:3	Incomplete 131:20 145:10 150:9 151:23 164:10 174:23 175:21 186:10 194:23, 24	infeasible 58:19 177:5
hypothetical 61:11 131:21 144:20 145:5, 10, 12 149:21 150:10 151:19, 20, 24 164:11 174:24 175:22 177:22 178:2 181:25 186:11 194:14 265:23 266:17, 24	II 92:19, 25 155:16 III.A 230:13 illegal 263:13, 14, 19, 21 illegitimate 251:15 illustrative 146:22 204:12	improve 93:5, 19 Improvement 219:12 impurities 83:4 252:11 254:7 256:3, 4, 7, 8, 13 257:10 270:4, 21, 25 271:9 272:24 283:21 284:3	incorporate 275:22 279:6 incorporated 107:25 108:9 incorporates 273:11 incorporating 274:18 276:2 incorrect 174:2 increase 256:13 increased 85:11 120:2, 6, 12, 13, 23 236:13, 15 increasingly 45:20 incremental 104:8 incurable 57:18 independent 172:15 INDEX 5:1, 12 indicate 264:7, 15 indices 182:13 individual 26:10 154:11 169:18 212:6 222:22 224:1 individualized 119:8	infected 52:21 infectious 45:13 49:18 inferences 87:21 influence 54:5 184:21 inform 12:8 INFORMATIO N 1:12 23:6 24:24 25:3 27:3 32:11, 18 33:2 34:17 38:2 53:19 54:4 64:4 66:9, 24 71:17 76:12 86:20, 25 106:1 125:16, 21 126:25 134:11 142:7 146:11 181:18, 20 213:3 225:4 233:22 260:6 268:6, 20 269:1, 2, 4, 5 277:6 278:2, 5, 7 informed 11:24 informing 12:12 Ingersoll 3:2 ingested 150:3, 14 198:12
hypothetically 131:14 222:1	impact 201:11, 16, 21, 24 202:1, 9 203:20 260:20 impacts 201:25 impede 9:1 imperative 294:12 imperfect 238:5 implement 240:2, 7	impurity 252:1, 7 257:12, 16 270:6, 7, 11, 14 inaccuracy 217:4 inaccurate 147:10 inappropriate 289:17 include 14:7 15:11 69:7 76:15 112:5 150:22 180:22 253:25 254:4 271:9 292:13 included 11:21 12:5, 17 78:11 171:22 172:21 180:23 includes 131:11 149:14 including 16:24 19:5, 7 71:10 73:9 113:3 172:14 177:7 216:24		
< I > ID 145:2 idea 91:15 173:18 260:7 278:25 280:16 ideas 275:4 identification 11:2 41:4 77:10 165:15 205:12 216:10 225:17 262:9 identified 24:17 107:23 254:15, 20 identifiers 195:3, 4, 20	implementation 117:19 261:11 implication 172:17 implications 210:18, 21 implicit 180:14 implies 189:19 imply 124:3 implying 110:17 importance 205:20 206:8 207:24			

ingestion 85:12	instructions 29:22 294:1	interface 33:10 76:11	involved 16:16, 17	JAMA 93:3
ingredient 283:20 284:10	instruction's 22:15	interfacing 33:13	26:25 27:6, 8, 9, 14, 18, 19	Janice 75:2
inherent 265:18	insurance 86:20 146:6, 9, 12 158:9	internal 40:2 42:5 44:9, 18, 24 46:8 49:17	29:11 31:20 64:9 76:14, 16 79:24	Janssen 67:18, 20, 23, 25 68:8, 11
initial 23:22 25:25 27:2 29:10, 18, 22 31:8, 11 56:10	166:22 182:9 189:22, 24 190:4, 9, 12, 17 191:9	internist 46:6 52:22 56:16, 25	133:16 172:8 173:19 229:14, 16 230:2 236:18	January 5:16 20:22 22:9 28:21 78:15, 18, 21 141:6 244:24 245:2
initially 27:15, 16 28:11, 21 30:3 32:5 57:2	194:18, 22 195:24 199:9, 19 202:9, 12, 13 204:3, 4 226:5, 11	internists 57:1	involvement 133:18	Jason 102:11
initiated 26:3 282:1	235:20 236:8, 15 237:9	interplay 286:17	involves 91:11 128:6 155:24, 25	JERSEY 1:2 4:3 7:10
initiation 52:25	239:12 246:23 247:4, 6, 13, 17 290:3	interpret 237:6	Iraq 50:13	Jessica 14:7 15:11 76:18 81:10, 20
injunctive 172:13	insurer 139:8 146:13 147:2 148:15	interpretation 155:24 172:5 218:1 227:20 242:3, 5 246:19	IRBESARTAN 1:5 7:7	job 40:4 42:18 43:1, 21 44:2, 5 45:18 47:9 50:22, 24 51:10 86:15 90:23
injury 277:22	237:16 239:9	interrupt 59:7 171:3 204:1 207:17	irrelevant 264:1	jobs 43:25 44:1 45:17 51:5 52:10
inkling 270:17	insurers 142:6 147:3, 6 193:11, 14, 15 196:8	intersection 147:3	isolation 89:6	Johnson 14:8 15:11 67:19, 21, 23, 25 76:19 80:8, 9
innovation 265:19	intake 110:17	interventions 97:25	Israel 43:2, 19 44:3 48:25 49:1, 12, 24 50:2, 6, 15 52:2	jointly 55:18, 19, 21
inpatient 42:11 45:1, 4, 9, 22, 24 46:14 49:22 62:4 143:22	intend 37:24 285:18	intestinal 123:11	issue 66:17 67:10, 12, 17 83:1 88:3 148:13 154:23 170:25 174:20, 21 175:19, 25 190:5 203:18 240:13 264:16 265:24 273:22	JONES 3:2 Joseph 4:19 7:2
Input 6:1 16:13 54:19 55:10 116:13	intense 47:9	intimately 219:16	issues 86:5 98:1 148:22 183:16, 19 251:9	Journal 205:6, 14 216:7 225:22 242:19 288:7 289:2
inquiry 71:17 208:20	interacted 15:15 52:6	intransparency 139:3, 10	items 224:21 263:8, 10	JR 1:17 4:2 7:22 296:14 297:8
instance 136:21 156:5 270:24	interacting 33:7	intransparent 141:1	its 133:16 223:5 270:12	Judson 75:14
instances 281:6, 8	interchangeabl e 287:6	intuition 181:11, 16		July 101:4
Institute 98:7, 9	interest 46:10, 12 92:5 175:16	invalid 232:23		jump 106:22
institutions 43:9	interested 39:17 91:19 99:22 142:18 146:3 149:3 157:23 174:13, 14 175:2 234:5 297:20	invasive 121:12, 16		jumps 166:2
instruct 18:10, 22 21:21 24:22 65:16		invented 265:16		June 44:6 272:12
instruction 18:19, 25 24:15, 25 64:3 65:7, 12 66:5 135:6		investigate 84:8		Junior 8:11
		invoice 14:14 77:13 78:9, 12 244:24		
		Invoices 5:16 77:2, 23 78:4, 7, 15 245:1		
		involve 135:14	< J >	

jurisdictions 153:10	184:23 197:22 208:19 210:8, 15 211:2, 5 212:11 213:21 214:5, 15 215:12 231:12 232:8 234:6 235:16, 22 236:6 237:6 242:2 245:22 251:11 254:17 264:23 275:7, 25 277:8 278:14	18 67:1, 8, 9, 15 68:5, 21 72:10 74:24 75:1, 10, 19, 20, 21, 22 77:7 79:13, 18 80:1, 16, 17, 19 81:6, 15 87:2, 14, 17, 18, 19, 20 88:8, 9, 11, 12 89:12, 14 90:4, 6 91:6 92:6, 14 93:14 94:19, 20 95:15, 24 96:18 98:17, 18, 20 99:18 104:4, 16, 19, 23 105:5, 25 106:2 113:5 115:1, 16, 22 116:24 117:18 118:11, 24 122:7, 9 124:3, 19, 23 125:4, 12, 13, 17 126:1, 6, 8, 12, 22 127:3, 10, 12, 15 128:22, 23 132:2 133:1, 15, 23 134:2, 4, 5 135:1, 23 136:7, 10, 18, 19, 20 137:10, 19, 20 138:2, 6, 12, 18, 19, 20 139:16 140:3, 19, 21 142:1, 6, 12 144:4, 11, 19 145:6, 23, 25 146:5, 7, 14, 25 147:8, 14 148:8 149:24 150:2, 18 151:19 153:15, 16 154:25 157:8	160:23 161:6, 21 162:10 165:5, 23, 25 166:1 168:6 169:5, 8 170:1, 21 172:13 174:6 176:5 178:8, 13 180:3 181:15, 21 183:3 184:13, 14, 23 185:1, 17 189:3, 11, 17 190:6 191:21, 22, 23 194:15, 23 195:25 196:16 197:16, 17 198:16 200:19 203:5, 9 205:15 208:5, 25 209:8 210:15 211:17 216:13 218:24 220:19, 20 221:14 222:24 223:16, 17 224:11 229:17, 19, 20 230:19, 23 231:5 236:9, 22 238:6 240:14 241:19 243:1 244:8 245:20 246:5, 25 253:23 254:3 256:1 257:16 262:11 266:15, 19 267:20, 22, 23 268:1 269:18 270:10, 13, 21 271:4, 22 272:6 273:2 274:4 275:6 278:9, 11	280:12, 19, 24 281:1 283:20 284:7, 8, 14, 16, 18 286:12 288:18 knowable 137:15, 18 224:19, 21 knowing 125:15 168:25 knowledge 54:23 66:4 244:16 255:19 280:1, 4, 17, 20 281:2 282:1 284:19, 24 285:2 knowledgeable 33:9, 10 219:16 known 90:25 91:4 139:2 145:19 198:4 240:15, 24 241:17, 22 254:6, 7 274:6 knows 141:3 170:1 185:10 KUGLER 1:8 KUM 4:7 17:11 235:2, 10 K-U-M 17:11 < L > L.hilton@kann er-law.com 2:7 Laboratories 3:15 Labs 4:1 lack 128:24 Lagana 74:23 landscape 248:9 language 172:17 large 147:1 196:15, 17, 19, 23 198:10
--------------------------------	---	---	---	--

210:22 215:8 217:7 largely 223:10, 15 lasting 51:15 Law 74:2 147:16 lawyer 173:3 lawyers 8:5 11:22 13:17 17:6, 10, 16 19:19 21:4 27:5, 12, 23 28:3 29:25 34:7 173:18 lay 60:5 137:6 LAYNE 2:4 246:6, 11 LCT 129:13, 20 lead 174:17 leads 164:15 learn 284:3 leave 40:10, 12, 18 41:18 194:24 leaves 64:7 left 234:16 legal 27:17, 22 28:4 29:25 30:20 53:18 65:17, 18 68:23 150:11 151:8 161:11 255:24 legality 263:25 legally 263:10 legislation 139:14, 15, 16 Leila 102:11 length 90:4 203:18 lengthy 28:8 166:1 letter 216:7 letters 216:16 leukemia 57:22 level 15:8 22:2 37:6	65:9 80:10 104:7, 10 135:5, 8 139:24 188:7 191:19 236:16 275:8 276:4 279:20 levels 85:12 126:18 152:24 236:7 239:13, 14 LIABILITY 1:6 7:8 liberations 230:17 Lieff 2:13 lies 53:23 262:22 life 38:5, 9, 11 58:23 124:4 127:21 201:20 249:25 lifetime 110:16 129:5, 13 130:7, 9, 11 131:4 171:14 light 70:4 273:6 likewise 259:18 limit 22:17 66:4 limitations 216:23 259:10 limited 146:8 181:25 193:12 201:20 limiting 18:19 72:21 line 71:5 112:12 212:11 295:3, 6, 9, 12, 15, 18, 21 lines 71:16 134:15 link 85:6 linkage 115:23, 25 116:16, 20, 21	linkages 115:19 116:15 linked 50:11 254:12 274:7 list 11:24 12:6, 24 19:16 73:21 116:19 118:2 120:17 253:22 254:2, 14, 20 255:8, 9, 10 274:9 listed 63:16 72:4 75:18 76:1 79:6 82:13 224:20 283:5, 15 lists 255:12 literature 83:25 92:22 238:8 241:9 276:6, 9, 13 LITIGATION 1:6 7:3, 8 38:13, 16, 19 70:9 71:21 72:1 94:3 133:16 134:1, 8 136:12 252:14 253:18 273:23 285:19 litigations 24:19 little 14:21 21:15 42:12 50:23 59:9 61:11 62:24 64:8 90:13 92:6 106:23 133:23 134:20 142:8 148:5, 18 168:21 198:20 214:24 229:19, 21, 22 256:22 271:10 liver 123:10 Livingston 81:14	LLC 2:5, 18 4:7 LLP 2:9, 13, 20 3:8, 13, 20 4:2, 10, 17 local 191:19 192:22 193:6, 22 194:11 195:5, 23 locally 192:21 193:4, 20 194:3, 6 located 13:22 location 229:7 locations 195:19 log 213:22, 23, 24 237:4 logarithm 213:24 214:12, 20 215:5, 6, 18 logarithmic 213:22 log-normal 215:13 log-normally 197:25 logs 213:21 237:2, 7 long 9:13 17:22 21:9 24:4 100:20 103:25 104:5 107:5 116:3 124:14 167:10 208:12 218:24 243:1 286:12 longer 17:25 153:3 175:12, 16, 18 222:21 longitudinal 217:7 long-term 61:22 look 11:8 15:25 76:22 77:1 79:3 80:22 84:24,	25 105:3, 20 111:18 112:2 122:4 123:24 141:19 142:24 143:6 158:20 160:24 162:22 163:11 164:13 166:12 181:2, 22 186:7, 15 195:19 198:17 201:2 206:24 224:11 225:25 227:12, 16 231:25 236:25 237:8 244:11, 12 246:4 254:13 264:4 265:9 274:10 279:16 289:9 292:1 looked 12:21 16:9 71:10 73:25 74:8, 10 95:3, 13, 17, 20 114:16 116:4, 14, 25 126:14 158:15 165:25 202:21 244:18 252:18 looking 63:16 79:3 87:23 147:2, 13, 23 158:23 176:11 178:3 209:16 215:16 224:1 227:14 234:15 254:17 257:6 looks 63:15, 17 73:6, 21 75:17 77:18 78:18 101:23
--	---	--	--	--

163:19 226:10, 11 250:19 255:9 290:1 Los 3:9, 14 4:11 LOSARTAN 1:5 7:7 losing 233:22 Loss 74:4 171:21 172:23 lost 164:1 lot 29:20 60:1 81:19 88:9 119:7 122:7 133:11 136:25 139:2 142:9 145:12 149:17 151:3 156:24 179:7, 8 183:1 184:13 208:1 222:24 223:12 225:5 236:16 237:10 278:10 LOTMAN 4:10 lots 234:23 235:7 270:7 Louisiana 2:6 love 132:24 low 105:12 112:13 115:9 116:22 low-dose 97:2 104:20, 25 105:4, 15, 19, 22 114:2, 9 lower 58:24 59:1 112:11, 17 113:19 115:14 122:15 132:2, 14 136:23 184:17 236:2 Lu 14:7 15:11 76:18 81:9, 10 lunch 59:17 62:23	lung 97:9 113:3, 12, 22 120:8, 21 121:2 123:1 160:14 < M > M.D 1:17 5:16, 19, 23 7:22 296:14 297:8 Madam 235:2 magnitude 105:18 111:22 112:17 115:23 236:11 main 17:3 26:10 97:18 115:22 235:23 283:18 288:20, 22 major 93:15 228:10 majority 142:9 164:7 200:25 203:6 225:10 Making 6:1 54:24 55:6 61:20 91:10, 14, 20, 22 92:3, 13 93:20 94:18 male 50:4, 5, 9 management 15:10 53:8, 12 manager 80:10 81:13 managers 15:7 managing 79:19 mandated 138:25 manufactured 171:17 252:13, 20 253:4, 17 254:2 257:19, 25 258:13, 22	265:25 266:5, 19, 22 267:8, 15 269:5 273:14, 20 manufacturer 88:12, 19 254:13, 25 255:1 267:2, 5 269:3, 4 273:15 manufacturers 268:7, 21 271:17 273:20, 25 274:6 284:8, 15, 19 manufacturer's 260:16 Manufacturing 257:21 258:2, 23 260:17 265:25 266:6, 15, 20 maps 119:4 marathon 9:4 March 1:19 7:4 297:21 MARK 2:9 10:23 35:21 41:1 262:1, 6 marked 10:20 11:1 41:3 77:9 136:8 165:14 205:11 216:9 225:16 260:25 262:8 market 133:11, 16 136:18 263:10, 13 264:6, 8, 11, 12, 17, 22, 25 265:1, 3, 13 267:17 271:19 272:5 273:7, 12 284:21 287:1, 3, 24 291:4 marks 292:21	Marshall 39:19 40:20 41:19 Massachusetts 4:18 43:24 132:21, 23 136:18, 21, 22 137:3, 4, 7 138:12 139:5 143:1 144:14, 19 145:2 master's 39:19 match 208:14, 17, 18 209:6 210:3 matched 209:2, 19, 22 matches 210:10 material 19:9, 13 materials 11:23 12:6, 15, 17, 21, 23, 25 19:14, 15, 16 27:21, 25 28:2 31:6 73:21 166:6 math 228:9 mathematical 215:24 275:11 276:7 277:16 279:8, 11 matter 7:7 66:12 67:8 134:5, 6, 8, 9, 10 135:1, 2, 3 145:7 286:16 matters 24:19 156:22 232:21 236:16 maximum 110:14 232:10 MBA 80:5, 6, 12 81:13 MBC@pietrag allo.com 3:23 McAllen 198:6	Mcharchalis@ btlaw.com 3:15 McLean 43:23 MDL 7:8 MD-Ph.D 133:6 mean 14:21 19:13, 14 21:16 22:6, 8 28:6 33:25 34:19 36:15 37:17 38:1 40:17 48:23 50:24 55:20 58:9 65:8 66:15 67:2, 7 68:21 69:19 72:13 73:7, 13, 14 75:7 82:24 85:25 95:24 96:18 102:24 108:7 111:7, 13 119:4, 5 120:1, 6 121:18 127:11 128:1, 13 131:3 133:10, 21 137:11 138:2 139:19 145:16 148:10 151:1 156:13 166:9, 15, 24 167:9 170:14 174:7 179:14 180:12, 13 181:11 183:18 186:12, 19 187:3 190:18 192:1 195:10, 11, 20 198:18 202:21 206:2, 16, 24 207:16, 17, 20 209:8, 9, 24 210:1 213:23, 24, 25 218:6, 16
---	---	---	--	---

227:22 228:3, 4 229:5, 8 231:17, 22 232:15 243:14 244:2 253:9 268:25 273:24 meaning 72:15 110:4 116:18 236:13 meaningful 89:17 means 55:3 70:12 79:18 88:12 120:7 125:22 169:2 180:2 228:3, 21 235:16 236:3 237:7 246:16, 17 meant 87:19 218:17 measure 149:8, 14 156:23 157:1, 2 169:11 180:21 210:25 211:3 213:9 219:24 227:24 228:7 232:16 280:18, 21 measures 98:19 194:17 208:12, 22 213:12 219:6, 12 meat 92:8 mechanisms 219:17 med 40:14 median 206:14, 15 207:21 212:13, 15, 20, 24 213:3, 8, 10, 12 227:4 medians 206:19 212:2 213:7 214:10	medical 29:11, 23 30:11 39:15, 16, 22 40:9, 10 41:15, 20 43:2, 19 44:4 49:24 51:25 52:20 55:23 61:19, 20 68:13 74:1 75:19, 23 76:5 90:7, 12 93:24 94:5, 6, 19, 24 95:4, 14, 16 117:19, 23 136:23 161:6 169:20 171:13 172:10, 15, 20 177:14 182:23 184:17 186:23 189:19, 21 192:5 193:16 194:9 201:15 205:22 206:9 215:1 221:13 222:8, 9 236:17, 19, 23 238:21, 24 239:14 240:13 246:16, 21 247:3, 12, 18, 19, 20 268:1, 2 269:3, 13 272:20 medical-legal 117:21 Medicare 5:22, 24 6:2 152:13, 16, 21, 22, 25 153:1, 10, 17 164:8 166:22 170:2, 7, 9, 10, 18 178:5, 11 181:1, 2, 3 182:2, 9, 10, 18 184:3, 11,	21, 25 185:11, 15 189:6 190:17 191:18, 20, 21 194:20 201:11 202:8, 15, 16, 18, 24 203:2, 7, 14 218:22 220:12, 13 222:17 223:1, 5, 11, 13 224:1, 2, 7, 14, 16, 24 225:3 226:10 231:9 234:24 235:8, 18 236:10, 14 237:10, 14, 15 238:2, 6 239:8 240:8, 16, 24 241:2, 22 290:3 medication 8:25 149:25 medicine 40:2 42:5, 10, 12 44:9, 18, 24 45:15, 16, 20 46:8, 16 47:10, 11, 13 49:17, 23 51:24 53:3, 4 54:8, 16, 23 205:6, 14 216:7 288:7 289:2 MedStar 144:6, 11 meet 108:4 166:13 244:1, 2 261:16 287:17 291:1 meets 287:1 MELISSA 3:19 member 97:21 98:3 113:4 members 15:7 137:21 176:15, 23	178:15 180:20 187:7, 13, 19, 25 189:9 190:23 192:13 291:23 Memorandum 74:2 memory 162:23 Menlo 14:2 mental 37:19, 21 mention 75:22 109:6 112:11, 25 212:18 264:18 270:20 mentioned 15:15, 21 16:22 19:3 20:2, 10 33:5 49:7 61:13, 16 70:6 76:14 109:24 146:14 168:2 195:25 201:14 213:16 215:13 243:22 279:5 mentioning 288:24 mentions 110:21 menu 183:5 MEPS 86:11, 13, 16 87:25 M-E-P-S 86:10 mess 227:21 met 106:14 107:24 108:8 112:4 258:14 meta-analysis 165:5 metastasized 62:13, 14 metastatic 57:12, 13, 14 58:22 59:21	60:18 61:6, 12, 13 62:8 method 209:9 methodology 195:12 205:21 206:9 209:3, 4, 11, 24, 25 213:6 214:1, 5 215:20, 23 216:24 238:6 methods 275:24 279:5, 6, 14 MGH 132:24 133:10, 11, 15 143:7 144:2 145:1, 16 178:24 188:3 204:8, 12 Michael 6:2 242:7 Michaela 14:8 15:11 76:19 80:9 81:21 microeconomic s 265:6 micrograms 110:16 middle 39:16 40:14 176:12 198:13, 15 199:23 261:10 midway 107:20 MIGLIACCIO 2:7, 9 5:4, 8 8:3, 5 10:23 11:3 14:23 15:16 18:15 19:11 22:6, 17 25:2, 13 26:19 28:17 29:7 31:2 32:22 33:16, 24 34:18, 23 35:3, 17, 20 36:3, 5 37:7 41:1, 5 53:9 57:24 59:12, 16 60:2, 13
---	--	---	--	---

62:18, 25 63:2, 10 64:13 66:1, 7 67:6, 22 68:17 69:14 70:15 71:2, 23 73:4 77:11 78:3 79:12 84:2, 21 85:9 86:6 90:15 91:21 93:7 95:1, 11, 22 99:2, 13 103:24 104:18 105:1 106:21, 25 107:3, 12 112:7 115:6 116:23 121:17 129:10, 19 131:1 132:4, 16 133:17 134:16, 19 135:12 136:3 137:23 142:13 145:14 146:16 147:15 149:19 150:20 151:14 152:9 153:13 155:4 156:11 157:14 158:1, 24 159:2, 4, 10, 13, 15, 18 160:2 161:16, 22 162:7, 19 164:17 165:13, 16 167:2, 19 173:20 174:10 175:11 176:2 178:1, 6 184:4 185:16 186:14 188:21 190:2 191:11 193:2,	18 197:14 203:24 204:16, 19 205:1, 10, 13 206:1, 13 209:10 216:12 218:8 225:1, 14, 18 233:6, 15 234:21 237:11 238:16 240:20 242:21, 25 243:8 246:4 256:5, 15 291:8 292:18 million 210:24 211:1 mind 159:3 167:15 mine 40:14 84:13 130:5 243:16 minor 122:3 minutes 59:13 62:20 77:5 159:14 286:3 Misallocation 100:8 misbranded 251:18 mischaracteriz es 114:22 116:10 252:24 256:9 284:23, 25 misdiagnoses 93:19 misleading 233:14 missing 114:19 misstate 21:16 153:24 misstates 84:10 145:9 173:11 MIT 40:1 41:24 80:13 81:13	MITCHELL 3:13 molecule 255:1 Molly 14:9 15:12 76:16 81:17 moment 77:3 106:19 124:16 212:16 228:5, 6, 7 290:11 moments 207:20 214:9 288:25 monetary 172:13 money 153:11 monitor 7:5 90:23 91:3 94:1 monitored 285:5 monitoring 29:11, 23 30:11 74:1 90:7, 12, 18 93:24 94:5, 6, 20, 24 95:4, 14, 16 117:20, 24 118:11 169:21 170:24 171:13 172:11, 15, 20 177:15 182:23 186:24 192:6 194:9 236:17, 19, 23 238:21, 24 239:14 240:13 month 51:13 78:16, 21 months 78:15 moonlight 43:7 moonlighting 42:20 43:21, 25 50:22, 25 51:5, 10	morbidity 108:24 109:2, 10, 15 morning 8:4, 7, 10 71:4 Morris 4:10 Mortimer 14:8 15:5 76:18 79:13, 14, 16 Motion 5:20 74:3 motivated 101:17, 18 155:9 Mourgos 4:19 7:2 mouth 54:7 move 140:19 163:2 182:17 183:2 205:4 228:13 moved 140:15, 16 movement 68:24 moving 181:21 183:9 Mpatronella@c lasslawdc.com 2:12 multidimension al 118:14 multiple 39:1 68:9 221:6, 25 multi- procedure 217:24 MURTHA 4:2 Mwonga 82:1 Mylan 3:15 < N > N.W 3:3 name 7:2 8:4, 8, 11 17:11 25:23 30:12 55:8 225:14 246:11 named 33:6 75:20, 21	76:17 171:19 172:22, 24 267:2, 5 297:19, 20 names 17:9, 13 74:24 75:4, 5 narrow 94:10 narrower 134:20 nation 176:17, 24 180:17 187:14 National 98:7, 9, 14 100:13, 25 104:1 187:6 190:24 191:24 192:11 209:6, 17 216:6 219:11 nationally 208:9 nationwide 178:16 187:21 naturally 284:12 nature 7:15 24:22 123:21 124:2 NBER 100:13 183:12, 13 NCCN 98:15, 17, 20 NCI 98:6, 8, 12 102:21 103:2 111:16 NCN 103:1 NDC 88:6, 12, 19 253:16 254:10, 12, 15, 24, 25 255:3, 7 282:7, 22 NDC's 254:20 NDEA 83:11 85:17 108:3 109:7 110:11 111:25 113:11, 20 115:2, 16, 19
---	--	---	--	---

116:2, 21 171:15 NDMA 83:11 85:12, 17 108:3 109:6 110:8, 14 111:24 113:11, 20 114:16, 19 115:2, 16, 19 116:2, 15, 20 171:15 NE 2:10 near 43:5 necessarily 51:6 86:22 124:1 137:3 146:4 154:20 164:15 222:8 245:19 necessary 134:3 141:20 258:4, 6 279:25 294:4 need 9:12 56:3 62:14, 20 100:22 105:3 106:7, 14 108:17 112:4 113:9, 17, 19 131:25 163:11 167:23 169:20 174:16 175:1, 8 185:19, 22 189:3 193:16 195:6 201:2 202:1 203:9 211:25 226:17 229:17, 18 239:14 264:25 267:23 268:1 269:18 278:11 280:12, 18, 19, 24 281:1, 2 needed 279:3 needing 168:6	needs 58:10 109:11 231:1 negative 122:14 237:2, 3 280:9 negatives 105:9 106:6 122:19 negotiations 149:16 neither 125:14 nephrologist 54:3 Network 98:15 139:25 140:1, 7, 8 never 47:7 55:22 75:5 252:21 257:7 276:19 nevertheless 254:2 NEW 1:2 2:6, 14, 21 4:3 7:10 22:25 104:17 105:11 147:14, 19 148:4 205:6, 13 216:7 242:19 288:6 289:2 newly 124:3 NICHOLAS 2:7 Nick 8:4 22:1 59:7 65:22 106:20 130:23 134:13 158:22 159:17 177:25 204:15 nights 42:21, 22 nine 107:22 111:21 123:4 206:23 nine-page 206:3	nitrosamine 83:4 88:4 131:17 171:16 252:1, 7, 11 254:6, 7 256:3, 7, 12 272:3 273:14 nitrosamines 83:14 85:6, 20 88:18 130:1, 4 131:9, 15, 25 132:3 271:1 273:7 278:8, 10, 13 281:5 284:20 Nmigliaccio@cl asslawdc.com 2:11 nominated 100:22 non-affected 87:6, 13 88:24 nontestifying 24:20 nontrivial 225:9 noon 158:25 normal 203:12 215:11, 17 normally 197:22, 25 normative 151:1 norms 49:5 notably 237:13 239:7 note 143:3 278:4 noted 7:18 36:4 294:10 296:10 Notice 5:14 10:4, 10, 20 148:21 noticed 173:16 November 44:5 Nowadays 51:7	NSQIP 208:13 212:15 219:3, 10 220:16 nuance 222:24 223:12 Number 7:8 13:23 17:19 44:22 49:6, 15, 21 60:20 79:1 88:12 89:4, 5, 6, 15 97:5 100:3 109:13 111:19 112:4 113:8, 10, 16, 25 114:25 118:15 119:4, 6, 13 120:17 129:25 133:7 155:21 164:24 169:22 170:8, 9 181:15 215:8 223:19, 21 232:1 285:14 numerator 232:2 numerical 112:13 118:8, 10 nurse 52:7 NYU 242:8 < O > oath 7:21 oaths 297:5 Object 14:18 15:3 18:9 21:24 26:15 28:13, 25 30:22 32:19 33:21 52:16 57:19 58:2 59:22 62:10 68:16 69:9 70:5, 24 71:11 77:25 79:11 83:20 84:9 85:3	86:3 90:9 91:8 92:10 94:22 95:8, 18 98:25 99:8 103:22 104:3, 22 109:21 111:6 114:21 116:8, 9 121:13 129:7, 18 130:14 133:13 134:2 137:16 141:25 145:8, 20 147:11 149:10 150:24 151:21 153:12 154:14 156:7, 18 157:6, 18 161:10, 19 162:4 174:5, 23 175:1 184:1 190:10, 12, 15 192:24 193:7 197:7 203:22 205:23 206:11 209:7 218:5 224:22 232:18 233:11 235:1 238:11 252:23 255:23 259:3 268:10 271:21 282:4, 17 283:16 284:22 objected 66:10 277:1 Objection 33:4 60:9 63:22 111:9 130:20 131:20 145:9, 21 150:9, 10 151:23 156:7 157:18 161:10
--	---	---	---	---

162:14	25 94:4	12 78:2, 8, 11,	261:5 262:5,	68:12, 14
164:10 166:9	105:24	17 80:20	11, 19 281:12	69:8 82:25
167:16 173:9,	109:16, 18	82:6, 15 83:9	285:5 286:14,	83:17, 22
10, 11 175:21	118:8, 9	84:6 85:10,	15 289:12	84:1, 3, 13, 20
185:12	123:8 129:16,	24 87:4	290:8, 12	85:25 86:1
186:10	21 134:22	90:11 94:10,	292:14, 21	93:3 94:2, 4
188:24 191:1,	201:3, 4, 5	19 96:2, 4, 5	old 155:1	105:24 108:2
3 240:17	259:12, 18, 25	97:6, 9 98:6	158:18 163:8,	109:17, 18, 24
256:9, 25	260:2, 10, 15,	100:2, 7, 20	20 164:9, 20	112:8 114:7
268:24 275:5	19	101:2 103:5,	omission 149:5	115:8 116:5,
283:6 286:19	office 13:25	13, 15 107:6,	omit 195:24	6, 13 118:9
289:18	14:2 144:11	13, 19, 20	once 39:10	123:5, 8
objections	247:19	108:13	62:13 118:25	124:11, 16
132:12	250:12, 13, 14,	110:25	165:17	128:25 130:5
objects 92:24	23, 25 251:4, 9	120:16 123:8	219:23 227:9	148:24
175:9	offices 13:24	130:22 132:8	228:13 232:9	185:18, 21
obligation	oftentimes	133:18 135:6	oncologist	191:15 192:3
260:16	47:4, 13 57:1	136:6, 11, 15,	53:2, 8, 11	196:20, 21
observation	213:8	16 139:18	54:2 55:2, 13,	201:3, 4, 5, 24
212:6, 8, 9	Oh 62:22	141:15	19, 22 56:2, 5,	252:19, 20
observations	75:16 101:7	143:20 144:3,	7, 11, 14 57:1,	253:3 257:4
212:10 228:22	102:10 136:2	18, 24 145:4	5 61:17 125:2	258:19, 24
observe 193:9	143:24 202:3	147:25 148:7,	oncologists	259:1, 10, 16
210:10	207:2, 4	10 150:7	56:23 128:18	260:7 261:8
obtain 23:5	234:10, 13	159:12, 16	oncology	262:15 266:3
obtained 41:23	Okay 8:12, 15	160:9, 21	46:16 49:19	268:14 273:4
obtaining	9:4, 20 10:3,	161:23	52:14, 18, 19	274:23 275:1
217:6	19, 21, 22	162:24	53:5 54:13	289:17
obvious 50:7	11:8, 12, 19	163:18	55:2, 4, 6, 21,	opinions 12:8,
201:5	12:3, 11 13:3,	164:23	24 56:21	12 13:11
obviously 9:7,	7, 14 15:19	165:18, 21	one-night	19:15 28:11,
22 10:16	18:14, 24	167:3, 4, 20	51:14	20 53:18
18:12 134:2	20:11, 13	168:20	ones 19:10	60:5 63:14
156:23	21:6 22:25	171:10 173:5	30:7 117:1	71:21 72:1, 6,
197:24 214:7	23:5 24:9	176:9 181:10	135:17 274:7	11, 14 82:21,
occurred 22:3	25:17 26:5,	183:8, 12	one-week	23 83:3 85:7,
odds 58:24	12 27:2 30:9,	204:21 205:9,	48:9, 10, 14	21 94:12
259:16	18 35:1, 20	18 207:4, 14	ongoing	106:4 115:24
offer 26:13,	36:19, 23	210:5 213:1	136:12	129:16, 21
22 109:24	41:7, 18	216:4, 15, 22	open 205:17	161:8 167:7
116:5 124:16	43:13 46:7	222:1 224:10	operate 58:12	174:3 258:4
161:8 238:5	47:24 49:25	225:11, 24	operation	259:12, 18
275:8 285:18	54:21 56:8	226:2, 4, 21	215:24 232:13	260:2, 11, 15,
offered 63:14	61:4 63:11,	229:19, 22, 25	operator	19 269:11
72:1, 6 94:2	17 64:14, 16,	230:1 234:13,	232:10	285:17, 19
123:5 161:9	20 65:8	16 235:20	opine 192:8	opioid 67:20
167:6	67:13 68:1,	239:19 240:4	269:8	133:25
offering 68:14	12 69:7, 24	241:7, 25	opining 94:4	opposed
82:22, 25	70:1 72:17,	242:18, 24	opinion 11:20,	50:15 57:1
83:17, 23	25 73:19	243:3, 9	24 17:2	62:15 104:25
84:3 85:21,	74:14 77:4,	246:3 247:9	26:13, 22	optics 175:7

optimal 58:16 59:5	275:21 277:12 279:5	PAGE 5:3, 13 11:9 43:10 76:2 79:4 100:4 148:1 227:17 230:13 235:14 250:17 264:4 295:3, 6, 9, 12, 15, 18, 21	19 226:14 230:10, 12 234:9, 18, 22 235:7 238:1, 25 239:21 240:12, 23 241:10, 11, 12, 15, 17, 25 242:2, 9, 19	142:3, 15, 16 173:6 189:1 205:24 232:3 248:12 252:15 254:1 270:12 272:23
optimize 101:20	outliers 198:3	pages 5:16 28:8 262:19 296:6	papers 92:13 99:25 101:13 102:2 204:14	particular 13:10, 13 18:21, 23 42:23 80:19 99:22 104:23 115:20 118:2 127:12 131:18 145:5 155:7 204:8 212:1 222:6 239:1 258:25 262:14, 24 263:3 264:5, 14 265:22 268:13 269:17 270:16 277:22
options 62:16 114:1	42:9 44:15, 17, 23 45:3, 18, 19 47:10, 11 61:23 138:19 140:15, 17, 20 142:11 143:24, 25 144:10, 12, 14 145:17	paid 34:4, 8 197:19 210:23 211:1, 2 222:14 239:25 244:21, 23 245:1, 3, 4, 20 249:8, 12 259:19 260:3, 20	paragraph 83:7 86:8, 14 87:23 89:23 96:3 102:22, 23 107:17 108:14 110:3, 19, 20, 22, 24 111:1 113:2 114:12 116:20 117:5, 6 118:14 119:2, 21 122:23 123:14 160:5, 11, 17, 18 163:12, 13, 14 168:2, 21 171:12, 23 172:10 176:4 186:25 207:10 227:19 251:24 261:3, 6, 11 265:10 274:12 279:17, 18 287:11 289:10 291:12	particularly 74:12 111:19 122:17 270:1
Optum 188:3 193:13 196:7, 9	overall 159:17 170:5 180:16 182:23 197:11 211:8, 19 292:11	pain 120:11 Palo 44:8, 10 46:15, 20 47:2 49:16 52:1 53:21 55:1, 16	part 29:18 38:4, 5, 9, 11 44:15 73:15 90:23 91:5, 9, 11 94:14 108:11 110:20 137:5	particulars 22:14
OptumHealth 179:2	overview 22:2	pancreatic 123:11	parameters 233:9	parties 7:12, 17 24:23 64:9 260:8 297:18
Oral 5:14	owned 145:1	pandemic 24:7 69:19	Park 3:8, 14 14:2	partner 79:18, 23 80:10
ORDER 1:13 30:5 64:1 67:1, 2 89:16 104:7 112:16 128:6, 7, 8 139:17 141:12, 14 184:15 188:11 189:4, 8 229:19 267:23 269:16 277:21 280:12, 22 285:12, 14	owner 70:3	Panel 76:5 236:25	party 172:24 249:5, 13	partners 15:5, 6, 8 79:21
ordered 285:8	Oxford 3:20	Panigrahy 74:11	pass 243:11 246:5	passed 130:7
orders 63:24 65:24 105:17	< P > P.C 3:2	Panigrahy's 75:8	path 122:21	pathologist 128:14
organization 31:14 43:25 87:1 97:16, 18 98:10, 16, 18	p.m 160:1 204:22, 25 243:4, 7 281:13, 16 286:5, 8 290:13, 16 292:23 293:1	Pap 285:15	pathology 126:15, 22, 23 127:2, 6, 8	patient 9:8 49:12, 14 50:1, 3 53:5, 8, 13, 17 54:8,
organized 31:13, 15 45:21	Pacific 7:5 63:9 107:8, 11 159:23 204:22, 25 243:4, 7 281:13, 16 286:8 292:23	paper 100:3 101:3, 6, 10, 15, 17 102:5 155:10 157:9 194:17 195:12 205:5 206:14 207:5 208:6, 7 210:6 211:8, 21 217:17 219:1 225:12,	path 122:21	
original 103:7 294:13	pack-year 97:11			
originally 32:25				
Orleans 2:6				
orthopedic 210:20, 23				
outcome 297:20				
outcomes 101:20				

12 55:16, 17, 24 56:1, 6, 20 57:2, 4 61:12, 13 86:21 88:9 90:18, 24 91:3 93:9 94:16, 17 101:20 113:17 119:9 122:19, 20 125:7, 18 127:23 128:5, 6 139:3 146:13 148:14, 20 149:1 154:11 156:21 157:23, 24 158:3, 4, 9, 12 168:4, 9 175:5 178:9 186:6 190:16, 17 202:10, 11 220:6, 16 221:9 222:19, 22 265:17 269:2, 18 270:16 277:10, 12 281:2, 19 282:7, 8, 23 patient/TPP's 262:18 patients 9:9 32:1 42:24 46:14, 15, 16, 17, 18 47:12 49:17 50:5 52:6, 7, 19 55:4, 6, 21 56:3 61:22 87:5, 7, 11, 12 88:11 90:20 94:7 96:20 99:21 108:1, 6 109:13 110:8, 10 119:12, 25 121:25 125:12 139:10 140:9	142:10 146:2, 4 149:4 154:16 155:11 158:11 168:9 169:19 170:7, 8, 9, 10, 16, 18, 23 172:20 174:13, 14 177:1, 2, 6 178:5, 10, 21, 22, 23 179:7, 18 181:1, 2, 3 182:2 189:10, 12, 13, 15, 16, 20, 21, 25 190:7, 8 191:6, 7 194:19, 25 195:14, 15, 25 199:13, 14, 16, 17 203:6 204:3 220:15 223:3, 4 253:7, 10, 11, 16, 21 256:14 268:8, 22 270:22 285:6 290:6 patient's 56:17, 18 58:23 148:17 261:18 279:20 PATRONELL A 2:9 pause 7:16 pay 146:4 150:23 151:9 223:6 261:18 262:18 264:24 265:18 266:4, 12 279:7 280:23 282:12, 19, 20 288:1, 3 paying 174:13, 15 192:5 223:1	payment 149:1 245:10, 15 payments 170:23 245:23, 25 payor 170:24 payors 137:1, 9 147:22 171:20, 22 172:21, 24 249:5, 13 pays 148:14, 15 151:17 152:22 153:7 190:13 222:17 PDF 264:5 peer-reviewed 162:3, 13 165:24 166:14 241:13, 15 288:15 peers 157:12 pejorative 40:17 pending 9:14 67:4 188:20 Pennsylvania 3:21 81:18 people 13:24, 25 14:6, 7, 10, 12 15:7, 14, 21, 22 19:20 33:3, 6, 8, 9 48:8 49:10 51:4, 11 76:14, 17 79:5 82:11 84:18 86:23 87:20 113:9, 17 120:1, 22 121:20 122:8 140:3, 22 147:13 152:16, 17, 18 154:25 155:17, 21 180:15, 16, 22, 23 181:15 187:25 188:1	197:3, 18 198:12, 18, 19 199:4, 24, 25 200:10 201:6, 7, 9, 10 203:12, 13, 14 220:4 230:23 241:4, 10 243:22 271:11 272:14, 17, 22 288:17 perceived 83:11 percent 35:2, 4, 5 37:13, 14 38:21 45:19, 23 49:2 50:5 52:9 88:22, 24, 25 89:2, 3 127:16 179:16, 24 180:3, 5, 7, 9 181:12 196:19, 23, 25 197:2, 5, 13 206:25 207:8 212:23 222:23 223:17, 18 236:8, 9, 14, 15, 20 237:7 238:21, 22 271:5 percentage 34:9, 13 37:1 38:15, 18 87:15 179:13 190:23 223:16 224:12 225:8 percentile 179:21, 22, 23 180:2, 4, 10 196:22 197:5 213:18 performance 105:8 performed 15:23	period 46:24 47:24, 25 77:20 116:3 177:18 253:13 person 14:1 47:13 55:7 75:10 79:14 81:2, 4, 15, 25 82:2, 5, 9 125:5 149:23 150:8 151:17, 19, 20 152:4, 22 153:19 197:19 202:15, 16, 17 244:3 279:25 280:7, 16 297:13 personal 38:1 personally 157:21 243:13, 14 275:14 281:21 282:21 person's 25:23 153:14 280:13, 19, 20 perspective 91:19 117:21, 22 274:17 perspectives 139:11 pertain 246:14, 23 Ph.D 5:19 15:13 39:25 40:1, 2 41:23 42:15, 17, 25 43:6 44:6 79:17 80:2 81:17 102:13 Pharma 2:18 Pharmaceutical 2:18 4:4, 7 67:19 262:17, 25 Pharmaceutical s 2:15 4:16 67:21 68:8, 11
---	---	---	--	--

Pharmacy 3:1, 4, 12 247:16, 21 248:3, 5, 9, 14, 17, 20, 21 249:9, 13 259:19, 22 260:3	placed 129:2 177:9	13 253:17 259:20 260:4 270:21 271:16 274:12 278:24 279:2, 14 280:24 284:2, 16 288:25	200:4, 11, 12, 16, 19, 20, 25 222:20 290:2 291:24	268:14 270:10 277:18 278:6 279:13 280:25 290:7 291:14
phone 13:17, 18 14:3	places 142:10	plaintiff 19:6 30:6 269:18 277:23	population-based 97:24, 25	Possibly 148:5 276:3, 14
physical 106:9 121:20, 24 122:2, 12	plaintiffs 2:3 7:23 8:6 16:24 19:6 74:2, 19 75:21 107:23 116:25 129:2 130:12 131:5, 17 172:12 246:12 292:15	points 207:24 212:11 233:18 278:14 288:22	populations 90:18, 24 91:3 107:25 108:10 120:25 121:4, 8 152:18 158:3, 13 160:8 169:4 194:25 200:5, 8, 9 220:6, 16	post 39:14
physician 12:13 15:19, 22 33:11 38:25 42:3, 19 43:2, 18, 20, 23 44:9 90:5 94:13, 14 102:13 111:5, 14 124:19 144:9 184:18 220:13 240:8 283:3, 13	Plaintiff's 5:19	Policy 6:1 15:13 33:10, 12 39:17, 20 40:15 135:11 233:9 244:16 250:24 251:7	portion 168:13 172:9	potential 83:12 85:7, 20 104:14 106:5 109:3, 7 110:1 114:1 115:14, 18, 23 155:12 196:14 251:10, 11 252:10 272:19
physician/economists 102:9	plan 56:10, 12, 13 78:8 202:13 246:23 247:6, 13, 17	political 184:21 230:24	portions 106:18 246:13	Potentially 61:10 64:4 65:10 115:1 117:20 130:2 138:8 139:22 145:6 215:9 246:1 251:14, 18
physicians 15:17 16:3 32:16, 17, 25 33:3, 14 43:24 49:6 53:7 101:19 102:6 144:10 218:24	planning 250:25 251:4	politics 184:14, 23	position 15:1 42:20 43:21 44:13 48:20 55:15 267:17	power 133:12, 16 136:18
pick 202:13	plans 128:15 202:12 204:3, 4 285:20	pool 223:4	positions 43:17, 18 51:20 250:17	practice 49:23 185:2, 5 283:2
piece 93:3 270:19	play 232:12	pop 77:5	positive 122:14 280:10	practiced 10:18
Pietragallo 3:19	please 7:16 8:9 95:10 159:5, 10 207:16 217:20 294:3, 7	population 49:12, 15 50:2, 3 86:18 87:16 93:12 96:11, 15, 19 101:21 108:5 112:19 119:11, 25 120:4, 14 122:16 154:12 156:21 157:23, 24 158:5, 10 160:14 168:4 169:6 170:6, 14 179:9, 10, 19, 20 180:3, 5, 8, 17, 24 181:13 186:7 194:18 195:14, 15 196:25 197:6, 10, 11 198:8, 13, 15, 22, 24 199:1, 2, 4	positives 105:9 106:6 122:18 197:24	Practices 257:21 258:2, 23 260:17 266:1, 6, 20
pill 150:14 265:14, 15, 18, 23, 24 266:4, 18	plus 175:5 245:4		possibilities 125:23 155:15	precise 37:12 235:12
Pittsburgh 3:21	pneumonia 56:1 155:13		possibility 123:15 144:22 170:19 198:1 252:7 256:2, 4, 11 258:12 270:5, 7, 13 271:3, 9 272:3, 24, 25	precisely 112:15
place 63:22, 25 65:14, 25 169:1 219:17 225:8	point 27:20 29:13 45:7 53:24 114:20 124:14, 15 127:3 142:19 167:25 168:3 182:20 185:9 189:14 192:1 193:8 212:9 233:19, 23, 25 234:6 235:23 240:15, 23 245:24 249:9,		possible 35:22 131:9, 13 148:9 174:17 183:4, 6 196:18 252:1 256:8 265:17 266:8 267:21	predetermined 184:24 208:18
				predict 238:2
				prediction 137:2
				predominantly 42:11 50:4
				Prefer 35:22

preferable 59:20	prevalence 84:17	17, 18, 19 139:1, 3, 7, 13	8, 13 56:16 228:17	17 209:22 212:7, 8
preferences 56:18 201:17	Preventive 97:17, 19	140:3, 9 142:5, 12, 25	259:16 285:14	217:25 218:22, 25
preparation 12:16 17:4, 17 19:4, 18 20:7, 17 21:1 78:13	previous 26:11 101:9 165:8 180:14, 25 208:2 248:2, 15	145:18, 23 147:1, 21 166:21 168:7 176:14, 16, 22, 23 177:6 178:10, 15, 16 180:21 181:24 182:2, 19, 24 184:17 185:25 186:6, 8, 13, 15, 16, 19, 21, 22 187:7, 12, 14, 18, 19 188:2 189:9, 24 190:22, 24 191:9, 18, 20, 21, 25 193:14, 16 194:18, 20, 22 195:23, 24 196:4, 23 197:18 199:9, 20 204:4 223:6 224:16, 18, 21 226:5, 10, 11 231:12 234:25 235:9 237:14, 16, 22 238:3, 7, 8 239:7, 9, 11, 13, 15, 16, 18, 23, 25 240:1, 16, 25 241:3, 23 290:3 292:1	principal 79:17, 19 80:7 Princeton 4:7 prior 23:25 63:13 65:7 71:25 145:9 272:16 281:25 priorities 140:24 priority 139:12 140:14, 24 private 147:6 153:5, 9 158:9 166:22 182:9 190:9, 16 191:8 194:18, 22 195:24 196:8 199:8, 19 202:12 226:11 231:12 235:19 236:8, 14 237:9 239:12 290:3 privilege 18:12 privileged 34:16, 19 probable 59:4 probably 42:21 127:3 133:6, 8 152:8 164:13 198:22 200:20 225:9 227:6 290:2 problem 53:4 54:9, 12, 13, 14, 16 61:19, 20 189:2 286:4 289:25 problems 52:20 54:8 170:7 procedure 106:8 122:13 139:5 208:8,	219:18, 20, 25 235:17, 19, 24, 25 297:6 Procedures 5:22, 24 104:1 106:9 140:15, 17, 20 143:21, 23 147:21 179:3 219:13 220:3 235:22 proceedings 297:16 process 16:7 31:1 70:18, 21, 22 71:3, 15, 20 91:10, 13, 19, 22, 25 92:3, 13, 17 93:12, 19 108:5 128:5 153:25 154:2 155:16, 23 218:21 230:24 237:23 244:13, 18, 20 249:16 283:20 processes 266:16 produce 244:12 produced 12:18 30:15 35:19 67:20 167:13 product 18:12 21:25 66:17 67:10, 12, 17 261:14, 15 264:7, 15 265:12 266:22 268:18 269:17 271:18 277:24
prepare 13:7, 9, 12 16:21 19:21	previously 26:5, 9 173:12, 13 248:6, 13, 18, 24 249:3, 11 260:25 288:6 price 137:6, 21 140:23 146:4, 7, 8, 20, 24 147:5, 9 148:16, 17, 20, 25 149:1, 7, 13 156:14, 16, 17 158:8, 9 176:12 178:23, 25 180:6 182:13 185:18, 21, 24, 25 187:10, 12 192:11, 13, 19, 21 193:5, 21 194:3 199:16 202:1, 3, 5 218:21 220:12, 17 221:2, 12 222:3, 14, 17 223:6 235:18, 19 236:14, 15, 17 237:21 262:23 286:18, 25 287:2, 5, 9, 22, 24 290:20, 24, 25 291:1, 4 292:10 priced 222:3 230:22 231:1 235:24, 25 prices 136:19, 22, 23, 25 137:4 138:15,	pricing 69:8, 13 132:19 145:4 147:10 148:13 156:3, 5 161:6 169:17 179:3 205:21 206:9 226:6 230:20 primarily 33:5 56:13 276:16 285:10 primary 17:1 19:8, 12 42:7,	prior 23:25 63:13 65:7 71:25 145:9 272:16 281:25 priorities 140:24 priority 139:12 140:14, 24 private 147:6 153:5, 9 158:9 166:22 182:9 190:9, 16 191:8 194:18, 22 195:24 196:8 199:8, 19 202:12 226:11 231:12 235:19 236:8, 14 237:9 239:12 290:3 privilege 18:12 privileged 34:16, 19 probable 59:4 probably 42:21 127:3 133:6, 8 152:8 164:13 198:22 200:20 225:9 227:6 290:2 problem 53:4 54:9, 12, 13, 14, 16 61:19, 20 189:2 286:4 289:25 problems 52:20 54:8 170:7 procedure 106:8 122:13 139:5 208:8,	25 297:6 Procedures 5:22, 24 104:1 106:9 140:15, 17, 20 143:21, 23 147:21 179:3 219:13 220:3 235:22 proceedings 297:16 process 16:7 31:1 70:18, 21, 22 71:3, 15, 20 91:10, 13, 19, 22, 25 92:3, 13, 17 93:12, 19 108:5 128:5 153:25 154:2 155:16, 23 218:21 230:24 237:23 244:13, 18, 20 249:16 283:20 processes 266:16 produce 244:12 produced 12:18 30:15 35:19 67:20 167:13 product 18:12 21:25 66:17 67:10, 12, 17 261:14, 15 264:7, 15 265:12 266:22 268:18 269:17 271:18 277:24
present 4:19 46:21 48:13 81:21, 22 83:15 121:24 122:2 284:3 presentation 155:11 presently 138:9 presents 55:17 pressure 258:10 presuppose 263:8, 25 264:11 presupposition 263:11 pretty 23:16 86:15 92:5 147:14 243:22	prevalence 84:17 Preventive 97:17, 19 previous 26:11 101:9 165:8 180:14, 25 208:2 248:2, 15 previously 26:5, 9 173:12, 13 248:6, 13, 18, 24 249:3, 11 260:25 288:6 price 137:6, 21 140:23 146:4, 7, 8, 20, 24 147:5, 9 148:16, 17, 20, 25 149:1, 7, 13 156:14, 16, 17 158:8, 9 176:12 178:23, 25 180:6 182:13 185:18, 21, 24, 25 187:10, 12 192:11, 13, 19, 21 193:5, 21 194:3 199:16 202:1, 3, 5 218:21 220:12, 17 221:2, 12 222:3, 14, 17 223:6 235:18, 19 236:14, 15, 17 237:21 262:23 286:18, 25 287:2, 5, 9, 22, 24 290:20, 24, 25 291:1, 4 292:10 priced 222:3 230:22 231:1 235:24, 25 prices 136:19, 22, 23, 25 137:4 138:15,	17, 18, 19 139:1, 3, 7, 13 140:3, 9 142:5, 12, 25 145:18, 23 147:1, 21 166:21 168:7 176:14, 16, 22, 23 177:6 178:10, 15, 16 180:21 181:24 182:2, 19, 24 184:17 185:25 186:6, 8, 13, 15, 16, 19, 21, 22 187:7, 12, 14, 18, 19 188:2 189:9, 24 190:22, 24 191:9, 18, 20, 21, 25 193:14, 16 194:18, 20, 22 195:23, 24 196:4, 23 197:18 199:9, 20 204:4 223:6 224:16, 18, 21 226:5, 10, 11 231:12 234:25 235:9 237:14, 16, 22 238:3, 7, 8 239:7, 9, 11, 13, 15, 16, 18, 23, 25 240:1, 16, 25 241:3, 23 290:3 292:1 pricing 69:8, 13 132:19 145:4 147:10 148:13 156:3, 5 161:6 169:17 179:3 205:21 206:9 226:6 230:20 primarily 33:5 56:13 276:16 285:10 primary 17:1 19:8, 12 42:7,	8, 13 56:16 228:17 259:16 285:14 principal 79:17, 19 80:7 Princeton 4:7 prior 23:25 63:13 65:7 71:25 145:9 272:16 281:25 priorities 140:24 priority 139:12 140:14, 24 private 147:6 153:5, 9 158:9 166:22 182:9 190:9, 16 191:8 194:18, 22 195:24 196:8 199:8, 19 202:12 226:11 231:12 235:19 236:8, 14 237:9 239:12 290:3 privilege 18:12 privileged 34:16, 19 probable 59:4 probably 42:21 127:3 133:6, 8 152:8 164:13 198:22 200:20 225:9 227:6 290:2 problem 53:4 54:9, 12, 13, 14, 16 61:19, 20 189:2 286:4 289:25 problems 52:20 54:8 170:7 procedure 106:8 122:13 139:5 208:8,	17 209:22 212:7, 8 217:25 218:22, 25 219:18, 20, 25 235:17, 19, 24, 25 297:6 Procedures 5:22, 24 104:1 106:9 140:15, 17, 20 143:21, 23 147:21 179:3 219:13 220:3 235:22 proceedings 297:16 process 16:7 31:1 70:18, 21, 22 71:3, 15, 20 91:10, 13, 19, 22, 25 92:3, 13, 17 93:12, 19 108:5 128:5 153:25 154:2 155:16, 23 218:21 230:24 237:23 244:13, 18, 20 249:16 283:20 processes 266:16 produce 244:12 produced 12:18 30:15 35:19 67:20 167:13 product 18:12 21:25 66:17 67:10, 12, 17 261:14, 15 264:7, 15 265:12 266:22 268:18 269:17 271:18 277:24

286:24 287:15, 16, 23 291:2 production 130:3 PRODUCTS 1:6 7:8 67:18, 20 83:15 250:9 251:25 252:3, 10, 13, 20 253:4, 7, 15, 20 254:1, 22 262:25 263:13 266:21 267:8, 15, 16, 18 272:5 273:11 281:22 283:4 product's 261:17 262:17 275:12 professional 77:18 250:17 professionals 79:6 Professor 5:16 242:8 profile 97:22 profits 149:14 260:8 prognosticate 128:7 program 39:22 42:9, 11, 15, 18 43:1 44:19 45:3, 5 90:7 93:24 95:16, 21 118:11 152:25 153:4, 17 169:21 177:15 182:23 186:24 194:9 219:12 236:17, 19, 23 238:21, 24 239:14 programs 94:20, 24	95:4, 6, 14 117:20, 24 251:12 promise 184:16 prompted 32:6, 10 prone 155:25 proper 275:8 properties 91:12 197:21 proposal 230:19, 23 231:1, 6 237:23 proposals 231:4 proposed 88:11 121:11 137:24 164:6 171:12 172:10 176:15, 22 179:3 187:4, 8, 13 199:22 259:8 proposers 237:23 proposing 236:1 propounded 296:8 prostate 61:1, 14 62:9 123:1 124:21 125:3, 4, 8, 20 126:10, 17, 20, 22 127:14 PROTECTIVE 1:13 30:5 63:24 provide 32:12 33:2 53:19 54:4 66:21 172:3 240:14, 23 265:19 provided 11:21 12:7, 22, 25 13:5 21:22 24:12	27:4, 16, 17 72:11, 14 73:16 77:14 102:21 173:6 244:8, 9 247:20, 24 248:3, 24 249:7, 15, 19, 22 provider 92:23 139:8 146:5, 8, 9 147:2 178:24 179:24 191:22 222:16 223:10 224:20 providers 92:18, 20, 21 99:22 142:4 147:3, 7 190:13 193:10 providing 66:10 222:5 257:13 PSA 125:9, 10, 11, 13, 22 126:18 public 25:10 64:24, 25 66:24 135:24 169:15, 16, 18, 22, 24 publication 162:18 290:1 publications 161:24 162:1, 9, 12, 21 163:6 165:22 167:14 205:4 288:16 publicly 24:21 64:22 137:20 189:7 191:17 published 101:3 195:13 216:16 225:19, 21 239:1 publishing 147:21	pull 39:8 77:2 163:1 166:12 287:12 pulled 87:5 163:21, 22 pulmonology 49:19 purchase 268:8, 22 271:4 272:18 purchased 270:11 271:8 272:11, 14, 22 purchases 272:16 purely 22:23 55:23 56:21 purpose 20:5 166:17 167:22 195:13 220:10, 11 236:5 238:18, 19 239:1 260:11 289:23 purposes 56:9, 12 131:14 162:11 166:18 167:22 177:19 255:16 257:18, 24 pursuant 297:5 pursuing 58:6 59:3 pushback 157:12, 16, 21, 22 put 10:14, 19 28:7 42:21 54:7 65:7 66:5 74:19 77:2 90:18 152:10 166:8 216:5 219:17 259:25 puts 98:18 150:14	< Q > qualifications 79:15 80:17 81:7 qualified 161:8, 14, 15 qualify 161:14 qualifying 161:12 quality 15:24 16:7, 18 93:6 98:19 124:4 125:11 146:14, 20 219:11 243:24 268:6 quantified 196:16 239:24 quantify 44:21, 22 186:18 196:11 quantifying 175:2 Quantiles 213:16, 19, 20 214:10 quantities 168:6 232:2 Quarterly 225:22 question 8:21 9:13 18:11, 20 22:13, 18 23:9 25:1 26:18, 23 28:16 29:8 31:4 32:21 33:12, 23 34:24 37:4, 17, 23 55:9 59:23 60:12 63:23 64:6 65:12 66:16, 19, 20 67:4, 5, 15 68:24 69:3, 10, 12 71:6, 16 72:21 84:23, 24 85:1 103:16 109:6,
---	--	---	---	--

7 116:9 129:9 130:8, 23 133:10, 24 134:13, 17, 25 135:5 136:13, 17 138:11 140:6 145:12 149:12 150:13 154:15 155:1 156:15, 20, 25 157:7 167:3 174:19 186:4 187:17 188:20 193:1, 19 199:10 203:4 206:4 209:23 219:15, 22 220:20 230:5 235:3, 6 238:12 240:18 246:6 253:2, 23 256:20 257:22 266:24 267:3 268:20 277:5, 11 279:11 286:16 questioning 71:5 questions 8:19 11:6 22:16 24:16 27:8, 9, 25 29:9 31:6, 8, 12, 15 32:4, 6, 9, 12 33:1 38:23 63:13 72:8 78:1 82:20 107:16 108:23 132:18 135:3 149:22 155:17, 19 160:4 161:4 205:3 234:12 243:10 246:6 285:22 286:3, 14 289:14	290:9, 19 291:6, 11 292:19 296:8 question's 202:5 quick 62:19 107:2 243:2 quickly 216:8 quite 10:24 15:9 39:17 42:7, 9 46:13 47:9 51:22, 24 52:10, 21 57:22, 23 58:21 80:10, 11 93:17 111:23 112:1 122:3 146:21 151:8 182:15 184:20 188:4, 7 194:14 198:10 204:9, 12 214:13 215:2 229:14, 16 230:2 231:13 245:23 263:2 292:7 quits 97:12 quote 172:13 217:3 287:14 quote/unquote 55:4 < R > RACHEL 2:13 radiation 105:13, 14, 18, 22 106:10 112:24 113:6 114:4 Radiological 250:20 Radtke 82:4 raised 148:13 Ranbaxy 267:2, 5, 7, 14 random 245:22 263:5	range 47:17, 19 49:8 115:18 116:14 228:23 ranges 50:19 215:7 228:24 ranging 49:18 Raspanti 3:20 rate 34:5 36:6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 20 87:24 88:23 245:4 rates 79:7 Rathod 2:9 ratio 166:21 195:12, 14, 17 ratios 192:22, 23 193:5, 6, 9, 17, 21, 22 194:4 195:23 raw 244:14, 18 reach 119:8 203:8 233:13 reached 76:23 171:24 191:13 207:9 read 16:20, 22, 23 17:3 108:19 112:3 117:12, 25 118:4, 13, 21 119:14 160:10 172:6, 9, 19 173:14, 23 192:10 217:13, 19 218:9 235:3, 4 252:8 276:6 287:13 294:3 296:6 reading 71:15 110:20, 25 111:3 167:10 207:13, 17 227:1 239:2, 3 reads 172:19 real 155:15 156:13 193:9 233:8 278:17	realistic 144:21 realizations 280:8 really 60:19 66:20 117:16 122:4 126:1 154:23 159:19 190:10 191:16 209:13 223:19 232:20 243:11 245:22 268:25 279:13 288:24 reason 51:4 104:6 138:11 139:1 176:13 187:11 189:15 198:11, 14 199:21 200:12, 13 226:20 282:11, 18, 19 294:5 295:5, 8, 11, 14, 17, 20, 23 reasonable 87:21 reasoning 261:12 reasons 32:3 177:6 ReBazan@dua nemorris.com 4:13 REBECCA 4:9 Rebuttal 5:14 recall 9:1 23:17 30:2 35:15 69:17 75:13 95:19, 25 162:20, 22 252:15, 16 253:6, 19, 22 254:2, 5	255:4, 10 267:6 272:8 276:15 281:22, 23 282:2 283:21 289:13 recalled 251:25 252:4, 5, 11, 21 254:20 255:3 267:17 271:18 284:21 recalling 272:4 receipt 294:14 receive 35:5 242:11 received 27:22 28:2, 4 29:24 30:3, 4, 5, 6, 13, 20 216:15 288:11 receives 222:20 recess 63:7 107:9 159:24 204:23 243:5 281:14 286:6 290:14 recognized 241:4, 7 recollection 75:6, 7, 9 recommend 169:20 222:11 recommendatio n 97:10 122:5 recommendatio ns 98:2 108:22 117:13 118:1, 4 220:12 226:6 230:21 240:3 recommended 114:2 160:14 270:22 recommending 99:20 104:16 recommends 239:18, 23 240:1
---	--	---	---	--

record 7:2, 19 8:9 25:11 35:21 36:2 53:22 55:3, 5 63:6, 9 65:15 66:6 107:4, 7, 11 130:15, 21 152:1 159:21, 22 160:1 166:9 204:22, 25 234:20 235:4 242:17 243:2, 4, 7 262:2 267:12 281:9, 13, 16 285:24, 25 286:5, 8 290:10, 13, 16 292:23 records 219:17, 19 recovered 35:7 Red 4:3 reduce 108:24 109:10, 15 281:6 reduction 279:19 re-evaluation 211:6 refer 19:12 39:6 57:4 76:4 96:9 98:12 109:25 112:22 166:5 278:1 reference 65:7 95:7 97:13 122:25 283:5, 15 referenced 20:24 77:20 79:5 98:6 102:21 138:23 references 16:9 referred 119:24 272:2 referring 10:6 11:23 12:1 30:10 71:14,	19 104:24 110:24 112:21 119:1, 18 163:15, 16 247:5 248:10 refinements 217:11 218:11 reflected 35:10, 12 219:2 220:16 reflection 49:4 217:10 218:11 reflects 31:13 125:11 reform 152:5 reframe 230:5 refresh 162:23 regard 161:12 289:14 regarding 21:22 31:17 33:19 133:16 217:11 218:11 273:4 287:19 regardless 220:17 222:4, 19, 20 272:9 regards 172:10 regime 151:15 regimen 55:10 56:5 61:23 regions 182:14 198:4 regression 212:5, 10 regular 114:4 128:11 regulated 265:3 regulation 250:8 regulations 257:20 258:1, 15 reimburse 247:21	reimbursed 175:5 reimbursement 224:2 reimburses 247:18 rejecting 278:25 relate 94:12 251:14, 17 262:25 263:12 272:15 related 28:1, 4 29:11 31:6, 9 50:15 64:5 69:12 91:14, 23 97:19 101:12 108:3 109:8 118:3 139:20, 22 154:3, 5 210:8 230:3 250:8 255:16 262:21 270:25 Relates 1:9 94:17 143:14 248:14 252:3 259:10 272:17 286:23 relating 69:8 94:4 102:18 relation 239:21 relationship 23:24 24:1 53:14, 16 70:2, 13 89:17 234:24 235:8, 12, 13 236:4 237:15 239:8 240:15, 24 241:2, 5, 8, 22 242:3 243:20 287:22 relative 113:5, 7, 12, 15 114:18 115:3, 5, 9 160:12, 16 179:20 181:3 218:18	relatively 38:9 201:20 relevant 11:14 22:7 84:14 108:19 115:24 137:21 156:18 163:11 168:12 181:20 193:15 194:8 258:17 264:1 reliable 216:1 241:18, 19, 25 242:4 relied 17:2 73:21 162:2, 10, 12, 16, 21 166:6 167:14 relief 172:14 relies 194:6, 16 261:12 rely 68:13 164:18 relying 135:9 169:9 remain 45:14 remedies 172:12 remember 17:9, 14, 19 19:9 23:17 30:7, 12, 24 31:11 32:5 74:13 75:12 79:24 80:6 81:2, 4, 25 82:2, 5, 8, 12 157:20 158:19 162:15 245:7 277:19 284:5 288:8, 13 290:21 remission 58:25 REMOTE 1:14 7:6, 15 244:6	remotely 7:13, 14 9:22 remove 58:13 renal 49:18 152:19 rename 165:17 renamed 168:18 render 28:10, 19 53:17, 18 rendered 77:19 182:25 rendering 83:3 rephrase 8:22 18:15 reply 217:23 218:2, 10 Report 5:14, 16 11:25 12:9, 13 13:14 15:20 16:4, 22 19:5, 23, 24 20:3, 14, 20 22:8, 20 25:5 28:7, 11, 20 29:14 31:14 33:20 34:1, 6, 15 35:7 41:2 58:5 60:5 66:3 70:21, 23 71:7, 8 72:16, 17 73:20, 22 74:10, 13 75:8, 11, 22 76:24 77:24 78:17, 21 83:8 85:4 86:10 95:7 96:3, 14 97:4 102:22 104:12 105:6 106:12, 13, 19 107:18 108:12 110:4 111:10, 19, 21 112:11, 22, 25 113:2, 23 114:22, 24 115:4 119:1,
---	--	--	---	--

19, 24 122:11 126:23 129:24 130:5 132:20 141:23 146:17 147:24 148:16, 21 150:18 157:19 158:14 160:6, 19 162:3, 10, 23 163:10 165:11, 23 167:5, 8, 11, 12, 23 168:14, 16, 17 174:8 176:4 177:1, 4 178:20 182:4 192:11 194:16 201:8, 13, 14 213:17 219:22 243:12, 13, 16, 25 246:14 251:20, 25 252:19 254:14, 19 255:6, 8, 16, 18 257:2, 3, 6, 18, 24 258:6, 25 260:11, 24 261:3 269:9, 12, 16, 21 270:20 274:22, 23 276:13, 15, 16 278:24 283:7, 10 285:18 287:11 289:8, 17 292:2 REPORTED 1:24 167:10 297:12 reporter 7:20, 24 235:2, 4 297:4 reporting 7:15 reports 13:15 16:23 19:5 24:12 29:12	30:6, 7 63:13 64:1 71:25 73:17 74:9, 15, 20, 22 117:1 report's 20:21 represent 233:18, 19 representative 86:17, 24 87:18, 22 185:18, 22, 24 186:8, 13 208:9, 21 232:25 represents 127:13 request 35:24 36:4 66:14 requested 11:13 172:12 requests 11:7, 10 32:6, 10 require 46:18 104:6 126:19 166:19 264:21 276:5 280:4, 16, 20 required 108:4 138:14 142:5, 23 147:16 256:1 269:11 284:11 requirement 148:4 264:13, 15 284:9 requires 53:13 62:3 re-reading 218:2 research 16:17 27:24 31:1 32:8 40:13 47:16 91:10 93:1, 8 98:24 99:6, 11, 12, 22 100:14, 25 101:1 142:14, 15, 17 146:23 147:4, 9	150:22 153:21, 22, 24, 25 154:2, 5, 19, 20, 21 155:6, 9 157:9 207:25 208:3, 15, 20 209:23 211:20, 21 213:4 233:10 250:1, 4 251:1 researched 94:23 95:3, 13 researchers 137:19 reserve 181:22 reside 197:4, 10, 13 200:14 residency 39:22 40:2 42:5, 8, 11, 14 44:19, 24 45:3, 5, 10 resident 42:13 residents 44:3 52:2, 4 resolved 211:5 resorted 210:25 respect 21:25 22:13 24:17 34:1 56:24 76:12 83:13 84:25 85:22 89:23 94:5, 6 98:13 114:15 128:24 129:16 137:18 138:22 148:12 156:3 172:17 174:2, 21 181:5 212:13 228:1 242:13 243:17 respected 161:17 respective 68:6 respond 99:23 101:19	responded 216:19 242:12 response 210:11 216:7 272:24 responses 209:22 responsibilities 285:9 responsibility 151:2 responsible 150:16, 19 restate 26:17 28:15 32:20 33:22 103:15 145:11 162:6 167:3 192:25 239:3 240:18 256:19 259:23 267:3 268:19 restrict 178:4 result 126:23 140:10 149:24 212:19 278:12 results 128:16 resumé 228:10 retained 23:10, 14, 15, 19 24:20, 23 26:8, 9 29:19, 20 64:11 68:5, 8, 10 69:16 72:6, 23 retract 289:3 retracted 289:6 return 124:15 294:12 reveal 24:22 63:20 64:4 65:10 66:24 revealed 284:17 revelation 277:7 278:3, 6, 7, 9 revenues 260:7	review 13:4 16:20 19:23 20:1 22:23 36:15 82:15, 17 84:7 85:10 103:1 105:20 127:5, 17 141:8 221:24 270:15 reviewed 11:20 12:16 13:14 17:1 22:24 83:25 85:5, 16, 18 129:4, 8 162:11 167:5, 8 reviewing 106:1 reviews 102:21 Rgeman@lchb. com 2:15 Richard 14:8 15:5 76:18 79:16 right 10:8 11:10 12:24 18:5 20:18, 21 21:17 22:17 25:24, 25 26:20 28:8 30:1, 16 35:25 37:10, 15, 20 41:10 43:16 45:21 46:25 59:14 63:2, 5, 11, 17 64:7 67:4, 16 68:18 69:3, 4 73:12, 14 74:11 75:6 76:1 77:4, 17 78:18, 19 79:8 81:17 82:19 86:12 87:17 88:3, 4, 17 89:21 96:12, 23, 24 97:14 100:17 101:25 102:8 107:13
---	--	--	--	--

108:14	226:5, 16	99:20 104:14	212:10	Schedule 5:22,
110:18	228:10 230:8	106:5, 9	runs 153:1	25 48:2, 22
111:12	231:22	112:11, 17, 18,	rural 136:22	49:3 50:25
114:10, 16	232:14, 21	20 116:19	RUV 237:13	51:6 220:13
117:14	233:18, 24	120:13	RVUs 182:11	223:5 224:6,
119:17	238:25	121:19, 20, 23,		13 240:9
120:23	239:25 243:9	24 122:2	< S >	Scholar 39:19
121:22 122:1	245:3 247:7	150:8 154:10,	safe 266:7	40:20 41:19
124:11	250:24 252:4,	16 160:12	safely 251:13	school 39:22
126:10, 11, 16	22 254:7	Rite 3:4, 12	safety 251:11,	40:9, 11, 14
134:15	255:10, 11	RKum@duane	12 268:6	41:16, 20
135:17	260:13	morris.com	sale 249:9, 13	Science 250:23
137:11 138:4	261:24 267:6	4:12	253:17	Sciengen 4:16
139:14	269:2, 20	road 278:14	259:20 260:4	scope 28:12
143:18, 22, 25	271:20 272:5,	ROBERT 1:8	sample 87:14,	82:21 111:9
146:21	12 274:1, 11	4:7	18, 22 227:22,	142:18
147:16, 19	275:3 277:17	robust 215:4	23 232:21, 22,	150:17 156:8
148:10	280:17 281:7	rock 263:5, 6,	23 233:1, 2, 4,	157:19 179:8
149:20, 25	285:20 286:11	14	5 289:22	240:17
151:5 152:21	risk 83:12, 13,	role 15:24	San 198:7	252:15
154:3 156:21	16 85:11, 20	52:5 232:12,	saw 11:4, 5, 6	253:22
157:2, 10, 13	90:20 93:10	19	49:13 52:6	268:11 283:6,
160:3, 20, 21	94:7 96:15,	room 9:23	140:22	10 284:23
163:10, 12, 20,	19 105:10	64:8	158:16 228:10	291:25
21 166:7	107:22, 24	Rooney 3:2	saying 102:24	scoring 131:16
167:6 169:7,	108:8 109:14	root 228:6	106:15 112:1	screen 107:25
8 170:12, 14	110:2, 17	232:9	157:22	108:9 113:9,
172:1 173:3	111:4, 5, 13,	rotation 45:2	174:25	17 119:11
174:22	16, 20, 22, 23	rotations	175:15 190:6	120:24
177:16	112:2, 5, 9, 12,	44:25 45:1	200:22 204:2	122:16 124:8
181:22	13 113:3, 5, 7,	48:2, 4	207:19 210:9	243:18
183:22	12, 15 114:8,	roughly	222:7 233:3	screened 32:2
185:11 186:8	18 115:3, 5, 9,	206:23 230:18	236:22	201:22
188:12, 13, 15	15 116:18	row 47:21	272:23 279:2	screening
190:3, 5	118:19 119:5	RUC 218:18	says 75:14	31:18, 19, 20,
192:9 197:15	120:2, 6, 12,	220:8, 9, 10,	96:8 107:21	22, 23, 25
199:6, 24	18, 23 122:12,	11, 17 222:3,	171:12	33:12 91:15
200:14	13, 17, 18	10 226:8	226:24	96:8, 13 98:1,
201:14 202:2,	130:13 131:5	230:20 231:8	254:19 264:5	13 103:7, 20
23, 24, 25	132:11	235:24, 25	287:14	104:1, 13, 14,
203:18, 21	149:23 150:3,	237:14, 21, 22,	scale 118:18	17 105:7
205:2, 7	4, 15 160:7,	24 239:7, 10,	218:19	106:5, 8, 9, 16
206:20, 23, 25	16 256:4, 8,	16 240:1, 4	228:18 237:1,	108:5, 24, 25
208:4 209:1,	13 258:12	RUC's 217:5	2, 8, 9	109:3, 10, 14
4, 6, 12 210:3	279:17, 20, 24,	230:17 240:3	scan 105:11,	112:3 113:21
216:8, 17	25 280:1, 4, 5,	rule 16:2	15, 17, 19, 22	119:23 120:5,
218:1 221:2,	13, 15, 16, 17,	ruled 123:15	114:2, 9	22 122:13
7, 18, 22, 23	18, 21 281:1,	rules 8:15	scans 97:2	150:8 156:17
222:2, 14	2, 4	35:24 62:16	104:21, 25	160:15 178:8
223:19	risks 31:16,	run 184:24	105:4	201:12, 16, 18,
224:14, 19, 21	20 58:6 59:3		scenario 110:5	25 203:25

285:8, 10, 12, 15 screening-implied 109:4 scrutiny-dependant 122:22 123:17, 19 scrutiny-dependent 123:10, 13, 16, 20, 23 124:6, 12 se 111:14 209:24 seal 64:18 65:2, 19, 23 search 11:12 second 42:25 79:4 96:6 119:15 172:23 225:20 228:6, 7 236:5 264:4 272:23 279:18 secondary 56:7 seconds 77:6 second-to-last 279:16 section 96:9 174:8 206:17 230:13 262:14 297:5 sector 141:3, 23 231:12 Security 249:23 250:5 see 10:4, 17 35:22 38:3 41:7, 8, 14, 15 43:3, 7, 14 46:14, 15, 16, 17 47:5 49:15, 16, 23 50:18 52:18 53:17 64:9 73:10 74:10, 15 75:25 76:6 77:7, 8	79:9 101:9 110:12, 25 114:12, 17 117:5, 8 122:4 123:2 134:3 146:19 152:11 158:21 160:24 161:2 163:14, 22 168:15, 20 171:11 172:16 173:21 202:3 205:15 206:17 207:7 209:19 210:2 218:14 225:20, 21 227:5, 7, 11 228:8, 12 230:9 234:9 235:21 236:2 239:11 250:18 257:2 261:20 265:20 269:16 279:22 291:10 seeing 10:21 35:15 47:11 178:24 seek 172:12, 13 seeking 220:9 seeks 183:21 220:17 222:3 seen 75:11 188:8 sees 50:8 sell 263:13 sending 58:25 sense 53:6 58:8 109:12 116:1, 13 129:24 151:1 201:18 219:8 233:8 247:9 266:12 272:18 284:7	sensitive 38:1 108:25 125:14 sensitivity 31:22 122:16 sent 10:5 288:11, 16 sentence 88:21 96:7 107:21 108:20 109:5, 9 117:12 118:3, 13, 22 160:11 164:21 218:10 265:9 279:16 separate 36:16 118:1 119:10 245:7, 9, 14 sequence 252:9 series 8:18 102:2 service 156:17 183:5 191:23 202:2 203:21, 25 220:23 221:1, 9, 10, 11, 16, 19 222:5, 20, 21 223:4, 10 Services 7:3 70:8 77:19 97:17, 20 136:24 140:1, 2 161:6 168:7 169:20 172:15 182:25 183:2, 5 184:18 201:12 205:22 206:10 220:12, 17, 22 221:4, 7, 16 224:20 247:20 session 9:4 sessions 17:15, 20, 21, 22	18:3, 6, 8, 17 19:19, 25 21:9 set 8:1 29:22 96:23 99:21 122:20 130:12 131:4, 10, 16, 19 132:10, 15 149:21 180:22 183:24 184:3, 22 185:1, 5 221:4 228:22 sets 87:10 233:17 239:16 setting 46:14 90:7 98:11 120:25 121:2 138:18, 19 155:11 264:23 settings 142:11 156:24 193:10 195:1 seven 17:25 47:18 75:18 124:11 152:8, 12 seven-hour 18:3, 6 shape 203:15 share 10:12 148:17 149:1 232:1 sharing 146:12 148:22 169:21 170:20 172:18 174:3, 9, 19, 20, 21 175:3, 6, 12, 14, 15, 17, 25 176:1 177:8 190:3, 11 203:17 shed 70:4 sheet 294:6, 8, 10, 13 295:1 296:10 shift 51:15	shifts 51:11, 12, 14 shock 280:10 short 17:23 23:16 shortcomings 196:1, 10, 15 shorten 251:5 shorter 153:3 shortest 152:3 Shorthand 7:24 297:3 shot 9:6 show 137:6 146:21 165:10 179:1, 11 187:25 192:22 199:12, 15 204:8, 13 214:8 216:3 225:12 234:8 292:9 showing 210:21 234:23 235:8 237:19 shown 83:15 279:21 288:5, 10 shows 193:6, 22 235:15 sick 52:21 202:10 sicker 223:2 side 16:24 64:11 68:25 251:10 292:16 sign 51:11 294:7 signed 28:21 78:22 significance 89:9 significant 44:15 78:24 89:11 signing 51:12 294:9 similar 51:21, 22 52:11
---	---	---	--	---

88:23 99:18 134:22 135:2 198:21, 24 199:2 208:2 279:10 similarly 119:12 simple 36:23 155:23 simply 89:18 Singer 102:12 single 55:7 105:18 118:18 119:4 178:9 195:16 221:16 233:19 sit 75:7 site 57:16 sites 143:8 sitting 172:5 situation 267:20 situations 237:12 239:6 six 49:3, 7 147:5 size 180:11 181:3, 5, 14 196:24 skewed 197:22 198:2 213:9 214:25 slope 235:21 236:3, 7 slopes 235:16 small 38:5, 9, 11 58:11 133:7 179:19 180:12 196:24 198:8 smaller 28:23 smears 285:15 smoke 97:12 smokers 96:18, 22 97:1, 3 120:3 smoking 97:11 113:13 121:1 160:13 snippet 10:10	societies 221:13 society 149:9, 13, 18 150:7 151:12 Solco 4:7 sole 115:7, 12 117:11 solely 52:1 somebody 25:23 56:9 59:5 61:18 130:7 135:10 139:24 150:2, 14 158:16 201:16, 17, 22 202:22 203:19 223:13 270:10 280:6, 22 286:23 somebody's 152:20 279:4 somewhat 110:5 184:2 Song 5:19 13:15 16:24 19:7 29:12 30:8 132:22 133:1 161:7, 12 162:2, 10, 21 167:14 169:9 182:22 194:6, 15 Song's 74:9 148:15, 21 165:11 187:3 195:11 289:16, 25 sorry 38:17 57:14 86:9 97:24 102:10 103:15 109:22 110:22 111:8, 11 121:6 130:19 134:7 135:19 143:24 168:18 171:2 186:4 203:25	207:6, 12, 15 208:10 223:24 244:24 263:16 sort 22:2 59:17 134:24 144:21 251:6 259:9 261:24 sorts 246:24 sought 31:9, 10 sounds 40:7 92:4 163:12 231:17 source 19:9, 12 86:16 117:17 175:13, 18 208:9, 11 219:3, 7, 12 sources 17:1 85:5, 17, 18 109:25 115:13, 14, 17 116:14 129:25 130:1, 3 146:23 162:16 166:4, 13 167:17, 21, 25 169:9 175:10 189:7 191:17 217:8, 12 218:12 230:15 259:13, 15 South 4:11 space 294:5 span 177:12, 14 speak 14:4 17:8 60:19 61:24 130:21 speaking 7:16 17:14, 16 19:19 79:20 84:15 152:15 230:19 235:17 speaks 168:21 261:17 262:16 special 96:23 152:18 216:24	specialist 53:15 54:11 specialists 144:19 specialized 54:22 55:9 specialties 46:3 210:19 231:3, 6, 7 specialty 46:8 144:12 236:1 specific 12:12 14:21 52:14 61:7 67:20 71:1 72:15 75:20 83:13, 16 84:22 90:13 92:24 93:9 106:2 108:25 125:14 134:17, 18 155:8, 10 156:10 160:7, 13 167:17 187:7 193:13 254:25 270:24 277:4, 11 specifically 55:11 84:4 92:1, 2 93:11 99:16 104:24 109:5 140:6 168:1 270:25 276:23 282:6 289:9 specificity 31:23 122:16 152:11 specifics 206:4 specified 88:19 190:14 194:10 specify 120:5 175:1 188:12 199:2 221:15 248:1, 19 specifying 198:25	spectrum 126:5 spend 38:8, 12, 19 44:25 45:1, 2, 18, 23 46:25 77:24 186:23 198:5 218:25 spending 45:8 69:8, 12, 15 169:23 170:6 182:23 184:17 186:18 194:8 197:18, 20, 23 215:1, 4 236:18 238:20 spends 170:1, 13 185:10 spent 27:7 37:13 38:15 42:7, 9, 12 46:24 78:20 167:10 185:15 219:13 222:5 split 47:22, 23, 25 148:14 spoke 17:5, 10, 11 sponsors 87:2 spot 59:9 spread 57:15 square 228:6 232:9 squares 232:8 staff 43:18, 19, 23 44:2, 9 251:3 standard 156:23 227:5, 7, 23 228:2, 4, 5, 21 229:2, 3, 5 231:19 standardize 227:13, 20 228:2, 25 standardized 227:6, 11, 24 228:15 229:4, 9 231:19
--	--	--	--	---

standardizing 228:1, 14, 20 229:14 Stanford 40:5 44:8 STANOCH 2:4 start 41:15 48:24 63:19 started 23:7 39:22 40:7 42:15 47:1 73:7, 8, 10 139:12 140:13 219:19 272:4 starters 39:4 starting 44:4 48:7 152:2 189:14 219:23 261:10 starts 215:16 starving 159:6 State 4:18 8:8 20:1, 2 21:14 31:17 54:10 60:11 83:10 87:24 95:9 176:4, 11 191:19 294:5 297:1, 4 stated 34:5 106:13 158:14 statement 61:16 117:17 129:12 264:20 271:2, 11, 13, 19 272:2, 13, 14, 19 287:13, 18 STATES 1:1 7:9 95:4, 14 160:11 280:14, 25 stating 83:19 statistical 89:9, 21 289:1 statistically 89:17 statistics 165:2	steady 42:18 steeped 223:13 stenographic 7:18 step 211:24 Stephen 79:23 steps 278:5 stipulation 177:25 stomach 123:10 stone 29:22 185:6 221:5 stool 121:10, 24 122:7, 9 STOY 3:15 5:6 14:18 15:3 17:10 18:9, 18, 25 21:19 22:11 24:14 25:8 26:15 28:13, 25 30:22 32:19 33:4, 21 34:22, 24 35:18, 25 36:4 37:3 52:16 57:19 58:2 59:7, 15, 22 60:9 62:10, 22 63:1, 3, 21 65:6, 21 66:2, 15 67:3, 14 68:16 69:9 70:5, 24 71:11 72:20 77:25 79:11 83:20 84:9 85:3 86:3 90:9 91:8 92:10 94:22 95:8, 18 98:25 99:8 103:22 104:3, 22 106:20, 22 107:1, 6 109:21 111:6, 8 114:21 116:8 121:13 129:7, 18	130:14, 19 131:20 132:12 133:13 134:12, 17 135:4, 21, 25 137:16 141:25 145:8, 20 147:11 149:10 150:9, 24 151:21, 23 153:12 154:14 156:7 157:6, 18 158:22, 25 159:3, 16 161:10, 19 162:4, 14 164:10 166:8 167:16 173:9, 15 174:5, 23 175:21 177:24 184:1 185:12 186:10 188:19, 24 191:1 192:24 193:7 197:7 203:22 204:15, 17 205:23 206:11 209:7 218:5 224:22 232:18 233:11 235:1 238:11 240:17 252:23 255:23 256:9, 18, 25 259:3 267:10 268:10, 24 271:21 275:5 276:24 277:1 282:4, 17 283:6, 16 284:22, 25 285:23 286:2, 10, 20 290:8, 19 291:11 292:20	straight 40:9 44:16 Street 2:5, 10, 14 3:3, 21 4:11, 18 strike 36:25 43:4 68:25 69:2 85:15 153:19 strong 234:24 235:8 237:15 239:8 structural 50:7 structure 248:8, 11 structured 44:24 structures 259:19 260:3 student 102:13 studied 91:18 128:1 studies 85:10, 16, 22 114:13, 18 165:8 234:23 235:7 study 89:8, 13, 21 117:6 164:22 165:3, 6 206:23 216:15, 23 217:2, 3 226:4, 6 233:16 241:1 studying 91:11 stuff 16:12 192:10 stylized 223:8 sub 142:4 180:21 SUBJECT 1:13 66:12 67:8 99:25 134:4, 5, 8 135:1, 2, 3 263:9 294:9 submit 78:9 submits 145:1 submitted 22:9 78:6, 22	82:16, 17, 18 205:5 244:24 245:1 289:4 subpopulations 93:9 subsequent 23:2 27:12 109:3 subsequently 80:1 subset 28:23 142:4 179:18 subsidiary 67:25 subspecialties 231:3 subspecialty 45:12 46:6, 9, 11 52:18 53:7 substance 296:9 substantial 160:12 176:12 187:10 268:5 substantially 113:14 subtract 228:3 subtracting 227:22 succinctly 154:1 suddenly 141:2 suffered 278:12 sufficiently 108:24 109:11, 13 171:14 suggest 188:9 189:14 suggests 188:4 Suite 3:3, 8, 14 4:3, 11 sum 154:1 232:5, 8 summarize 176:13 187:11 summary 165:2
--	--	--	--	--

summing 232:1 Supply 249:23 250:5 258:15 261:7, 15 262:20 263:3 264:3, 19, 21 265:15 287:1, 2, 4, 17 290:25 Support 5:19 33:8 34:10 74:2 240:15, 24 261:22 262:15 supported 178:19, 20, 23, 25 supports 238:2 241:1 supposed 86:17 282:15 Sure 8:10 10:24 14:17 16:9, 10, 11, 12 34:15 35:25 36:3 37:11 39:5, 10, 13 42:4 49:2 51:1 59:12 60:23 69:13 71:4 86:14 96:16 97:8 98:19 108:21 111:7, 12 112:15 115:3 131:7, 10, 23 132:1, 8 133:14 134:15 136:14 137:2 141:10, 16 145:15, 24 159:4 161:13, 20, 25 162:5, 17 164:12, 15 166:11, 15 167:8 168:2, 15 186:3, 4, 16, 17, 19 190:13, 19	199:7 204:19 206:6, 12 209:24 214:4 215:22 218:6 219:4 222:13, 23 230:3 243:14 244:23 246:18 248:7, 19 249:14 253:2 255:25 257:23 259:9, 24 274:14 283:11 284:5 285:3 286:22 surgeon 219:22 surgery 62:16 208:12 210:20, 21, 23 211:1 219:18 Surgical 5:22, 24 210:19 212:7, 8 219:11, 18, 19 220:3 Surplus 6:2 262:20, 22 263:8, 9 264:2, 6, 9, 16 265:7 surprise 139:19, 23 140:5 284:18 surveil 251:10 Survey 76:5 86:17, 18, 24 87:19, 20 208:8 209:22 210:11 surveys 86:22 218:24 suspect 167:15, 18 switch 169:3 sworn 7:14, 24 297:10 symmetric 215:9 269:6	symptoms 96:21 120:7, 12 synonymous 288:4 System 44:11 131:16 144:6 150:23 151:8 155:25 204:11 systemic 62:15 systems 92:23 < T > tail 197:5 200:14 tails 198:9 Take 5:14 9:9, 11 17:22 23:14 40:8 47:25 56:17 59:11, 13 62:19 84:18, 19 87:7, 11 103:25 116:17 126:21 151:3, 13 159:11 177:2, 3, 8 178:21, 22 188:1, 2 189:12, 13, 16, 19 190:1 191:7 198:19 199:13, 14, 16, 17 201:6, 9, 10 203:17 204:18 213:23, 24, 25 214:19, 20, 21 215:3, 17 217:20 220:4 222:1, 2, 8, 21 232:9, 21 243:1 244:11 271:12 286:3 takeaway 46:10 taken 63:7 107:9 126:13 133:21 159:24	204:23 243:5 281:14 286:6 290:14 takes 200:16 201:1 202:22 208:13 219:21 252:19 talk 19:20 34:19 36:1 60:25 65:8 108:15 111:21 118:23 121:18, 23 122:11, 22 221:21 237:5 260:23 261:2 263:2 264:9 271:10 274:22 talked 90:3 120:3 153:22 203:18 224:17 239:20 talking 30:9 88:2, 15 95:5 107:14 119:16 120:8, 10 137:24 139:18, 21 161:5 175:13, 16 180:11 181:1 200:5, 8, 9 233:5 239:12 264:23, 24 272:19, 20 273:10 274:13 279:17 talks 93:4 230:13 235:13 target 96:11 Task 97:18, 21, 22 250:7 tax 145:2 taxpayer 153:2, 5 taxpayers 153:8, 16 teaching 223:2 team 16:16, 17 33:8	211:15, 20 213:4 286:8 Technical 242:15 246:18 technique 218:23 219:1, 2, 6 techniques 217:12, 16, 18 218:4, 7, 13 219:5 231:20 technologies 31:19 technology 10:13 39:11 105:7, 8, 11 123:18, 24, 25 124:7, 8 250:23 telephone 244:6 tell 8:21 9:8 14:12, 15 15:4 23:13 25:11 30:25 37:12, 16 43:10 50:22 63:18 64:20 66:11, 14 67:10 79:1, 13 86:13 115:10 127:17 134:21 138:21 160:24 184:10 186:23 187:1 188:18 194:11 196:13 207:22 223:14 225:20 227:25 241:12 257:11 262:14 267:7, 14 telling 20:16
---	--	--	--	---

tells 143:3 179:8 229:21 237:9 280:5 ten 62:19 204:18 286:3 tend 50:10 tendency 232:17 tenfold 139:6 term 72:15 226:13 228:2 246:16, 18, 20, 21 251:20 252:2 257:7, 9, 11 terminology 118:25 terms 15:1 38:4, 7 42:2 44:24 49:5 52:24 53:18 61:25 79:15 93:18 105:8 106:5 151:12 167:10 180:12 197:11 210:22 212:2 237:3, 4 258:10, 11 275:20 287:6 291:1 test 94:16 121:19 125:9, 10, 11, 13, 14, 15, 22 127:2, 6, 8 155:23 testified 7:25 25:6 32:24 74:7 114:3 173:12 248:6, 8, 13, 18 249:3, 6, 10, 11 270:9 291:12 testify 9:2 134:4 297:10 testifying 24:18 72:22 86:1, 4	TESTIMONY 1:16 24:13 36:7, 12 63:14 66:3 68:2, 3, 18, 25 69:7 71:25 72:7, 12 73:16 84:10 133:25 134:21, 22 145:9 247:25 248:2, 3, 15, 25 249:7, 15, 20, 23 252:24 256:10 257:14 280:15 291:2, 17 292:22 297:12 testing 96:10 106:7 121:5, 8 149:9 tests 31:22, 23 91:12 98:1 106:5 108:25 121:10, 11, 19, 24 122:3, 5, 7, 10, 15 246:24 285:8, 12, 15 Teva 2:15, 18 Texas 198:6, 7 text 263:22 textbook 261:24 263:2 265:6 thank 8:23 9:15 25:8, 9 72:19 235:10 246:4, 7 255:15 285:21, 23 290:8 292:19 Thanks 8:6 143:20 thematically 134:24 135:1, 3 theory 261:13, 22 287:15, 19, 22	therapeutic 62:16 therapy 113:6 thereof 128:24 thing 9:6 112:25 144:21 156:22 229:13, 21, 22 233:3 234:5 271:6, 8 279:15 287:8 288:1 289:20 292:6 things 61:8 89:15, 20 118:17 144:15 150:1 156:5 166:3 183:21 207:22 218:20 220:21 246:23, 25 266:15 275:25 282:15, 19 284:13, 16, 17 think 11:5, 6 15:8 17:5, 23 20:21 21:10 22:7, 12 23:19 24:7 25:18 29:21 30:19 31:5 32:15, 24 33:11 34:18, 20 35:23 37:17 40:24 41:6, 8 43:7 47:3 49:1 51:24 52:13 53:17 54:6 56:8, 25 57:20 58:4, 15 59:4, 25 60:20 61:8, 25 63:15 64:8, 12, 19 65:8 66:9, 11, 13, 15, 18	67:4, 14, 24 70:17, 19 71:3, 14 74:7 77:2 78:1, 23 79:5, 20 80:5 86:14 90:4 91:16 93:21 96:25 102:22, 25 104:5, 15 105:17, 21 106:12, 15 107:3, 14 108:14, 16 110:22 112:10, 24 115:2, 12, 18 117:16, 23 118:13, 24 119:18, 21, 22 120:4 121:18, 20, 23 122:23, 25 125:1, 25 127:15 128:22 132:19, 20, 22 133:8, 21 134:12 135:6 136:14 137:5 140:5, 12, 22 141:11 147:13 149:11, 13, 17 150:17 151:3, 5 152:7 153:3, 21 154:1, 18 156:15 158:7, 14 159:18, 19, 20 160:6, 10 161:5 162:24 163:6, 8, 16 164:13 165:1 167:23 168:3, 21 169:10, 12 171:7 176:18 177:17 178:19 179:10, 14 180:23 181:20 182:20	184:20 185:2, 9 187:24 188:7, 20 189:1, 16 190:19 191:10, 15, 24 192:1, 2, 4, 17, 18 193:8, 25 194:1, 4, 5, 7, 15 197:20 198:22 199:18 200:15, 24, 25 203:3, 7 204:2, 12, 13 207:6, 18 208:2 209:13 211:8 214:20 216:22 218:17 219:9 221:22 223:12, 25 226:22 227:14 228:10 229:23 230:7 235:11 236:5 237:17 238:10 241:9 245:6, 13, 19 252:6 254:24 258:3, 5 259:4 262:4 265:10 266:8, 11, 24 268:14, 15 269:12 272:17 275:14 276:5 278:4 279:10 283:18 284:6 288:21 291:9, 22 292:6, 7, 8 thinking 27:7 58:16 59:5 71:16, 20 118:5 151:3 third 30:10 40:11 43:6 73:25 74:3 96:6 129:6 172:24
--	---	--	--	--

231:11 249:5, 13 third-party 171:20, 22 172:21 thirty 294:14 Thornburg 3:8, 13 thought 124:13, 14 148:6 151:13 167:18 205:8 209:15 275:7, 18 276:4 291:10 three 17:20, 24 21:11 24:8 63:15 64:14 67:17 68:6, 19 69:24 71:10, 24 72:3 73:9 75:18 87:10 101:24 102:10 118:25 183:10 216:15 230:7, 15 threshold 107:24 108:8, 12, 18 112:1, 14 117:4 118:9, 10, 18, 19, 23, 24 119:3, 6, 9, 10, 15 129:2, 5, 9, 13, 14, 17, 22 130:8, 9, 12 131:4, 16 171:15 thresholds 106:14 107:15 Thursday 1:19 thyroid 123:1 Tibrewal 82:7 tickets 263:5, 6, 15, 19, 21 265:2, 5, 8 tiering 248:11	time 7:5 8:6 22:18, 19, 20 27:7 28:12 29:6 34:5 37:13, 16 38:15, 19 40:8, 18 42:7, 12 45:8, 19, 23 46:23 47:2, 3, 4 58:16 59:5, 10 63:4, 9 77:24 78:17, 20, 24 86:23, 24 100:20 101:7 102:2 103:25 104:5 107:1, 8, 11 116:3 124:7 126:9 142:11 154:25 157:21 159:1, 17, 23 160:1, 23 164:1 177:12, 14, 18 204:17, 22, 25 206:15 208:12 210:10, 12, 16 212:9, 14, 15 217:5, 25 219:12, 18, 19, 23, 25 220:1, 3 222:5 230:1 243:4, 7 244:22, 25 245:5, 6, 11 246:5 252:14 253:14, 19 270:11 271:19 272:1, 18 280:24 281:13, 16 284:5, 16 286:8 292:24 timeline 23:16 271:22 278:15 Timeliness 154:22 timely 154:12, 17	times 110:16 118:25 128:23 206:23 209:21 226:13, 24 227:8, 10 239:24 timing 246:2 tissue 126:13, 14, 19, 21 127:12, 18 128:1, 6 titles 79:6 tobacco 104:21 today 8:25 35:22 75:8 117:2 247:24 260:11 Today's 7:4 16:21 78:12 292:22 told 17:5 27:3, 15 32:15 71:3 128:20, 23 177:7 209:15 223:8 224:3 tool 233:10 tools 151:4, 5 top 63:19 78:23, 25 80:1 197:13 topic 106:23 269:8 total 48:17, 18 72:5 148:16, 20, 25 149:7, 13 186:18 totally 9:14 touched 249:17 TPP 260:21 TPPs 259:20 260:4 266:4 TPP's 261:18 265:17 trace 153:16 track 42:8	185:14 tradeoff 92:20 tradeoffs 92:15 training 52:18 transcribed 297:14 transcript 294:15, 16 transcription 296:7 297:15 transcripts 66:9 135:16, 24 136:1, 5 transform 214:11 215:10, 25 transformation 213:22 transformation s 214:16 transforming 215:23 transforms 215:6 transparency 138:17 140:23 141:24 142:2 146:7, 24 148:4 transparent 138:15, 25 139:13 141:2 145:7 Traurig 2:20 treat 61:14 62:8 124:1, 8 155:2 treatable 57:23 treated 55:25 treating 61:19 62:13 258:11 275:24 treatise 261:24 treatment 56:10, 12 58:8 94:15 98:22, 23 99:4, 17	109:1, 4 123:22 128:7 154:12, 17 Trial 36:12 68:2 86:2 tried 176:25 true 137:2 150:2 180:24 223:11, 15, 16, 17, 18 272:7 297:15 truly 113:18 Trump 140:22 truth 196:12 297:10, 11 truthfully 9:2 try 9:5 10:12 39:9 56:17 58:18 134:19, 20 152:10 163:1, 25 227:21 230:4, 5 232:22 trying 22:10 23:2 37:25 38:1, 6 39:11 65:3 101:20 153:23 163:3 166:24 230:8 232:25 234:7 238:19 255:7 tucked 227:6 turn 97:7 100:1 twice 118:25 227:4 two 9:19 15:4 17:24 21:2, 3, 8, 9 24:8 39:18, 19 43:17 45:17 48:3, 5, 7 51:13 52:3 67:19 75:17 78:1 80:15 101:24 102:10, 11 112:17 113:7 152:15 158:3, 12 170:7, 10 182:3 183:4,
---	--	--	---	--

9 185:25 200:5, 8, 9 208:14, 16, 22 220:22 222:11 228:19 231:15 255:12 two-week 48:4, 5, 15 type 40:12, 13 45:11 49:10 54:22 57:17, 21 61:8 83:14 86:25 92:19, 24, 25 93:1 104:10 109:8 113:21 120:18 155:16 191:22 202:9 219:21 222:16 223:3, 9 282:11 types 27:8 45:17 57:9, 11 60:21, 22 99:12, 14 107:22 111:16 119:22 152:15 221:20 235:22 269:1 288:25 typewriting 297:14 typical 44:23 45:5, 8 49:22 typically 183:22 typos 16:6, 11 < U > U.S 4:7 86:18 87:22 97:17 181:12 197:11 198:5 UCLA 39:16 Uh-huh 38:7 61:2 66:1 75:19 76:3	77:15, 22 88:7 97:15 103:3, 10 105:2 114:14 118:23 122:24 124:22 126:9 134:16 137:10 143:2, 5 144:8 148:2 157:4 164:25 170:4 174:11 178:7 184:10 185:4 187:5, 9, 16, 20 206:18, 21 209:18 212:4, 17, 25 214:22 215:15 216:2, 18 217:1, 9 218:15 220:2, 24 224:8 225:23 226:3, 9, 15 227:15, 18 230:11 241:12 245:12 261:1, 9 274:16 279:23 ultimate 175:5 ultimately 52:22 53:19, 23 153:11 186:17 207:9 269:12 278:11 Umm 230:11 unaccounted 174:18 unavailability 177:7 unavailable 177:11 uncertain 182:5, 8 183:7, 11 uncertainty 127:18, 19 138:16 139:10 182:18 183:1 266:14 270:2	276:2 279:6 280:6 unclear 140:25 145:22 uncommon 288:15 uncontaminate d 273:19 underdiagnosis 92:16 undergrad 39:15 underlying 19:24 20:2 124:2 214:14, 16 215:3 217:17 underserved 223:4 understand 8:20 9:10 37:9, 18 40:18 56:8 60:4, 6 66:7 92:14 106:7 123:4 130:11 131:3, 7, 19 132:10 138:3 148:15 149:2 172:11 186:4, 17 190:20 211:11 221:19 245:23 246:2 247:10, 23 253:13 259:9 understanding 67:24 68:23 72:20 80:9 83:24 149:3 170:22 171:9 172:2, 3, 4, 6 194:17 246:15, 17 247:15 255:11 understood 148:19, 24 undertake 278:23 unexpected 140:9	unfortunate 197:1 uniform 108:5 uniformly 236:21 unique 253:15 UNITED 1:1 7:9 95:4, 14 University 81:18 unlucky 180:8 unprecedented 282:2 unweighted 186:22 update 218:19 237:13 updated 270:8 upsides 60:8 urgent 9:7 urinalysis 144:15 urology 210:20 USA 2:15 use 31:19 53:17 70:8 101:21 108:4 122:5, 15 128:16 132:20 151:8 156:4, 10 157:4 168:12 180:24 195:23 206:19 208:3, 4 212:12, 15, 19 213:7, 10, 13, 17 214:1 217:7 218:24 219:4 225:3, 4, 6, 7 226:13 231:21 232:16 233:7, 13 234:3, 4 238:2, 7, 19 246:21 251:20 257:7, 9 279:5, 14 289:14, 16, 25	useful 191:25 192:2 233:9, 12 user 163:8 164:3, 19 users 104:21 uses 165:22 231:14 263:4 276:9 USP 102:17 USPS 98:3 USPSTF 97:9, 13, 16, 17 98:4 102:17 104:2 108:15, 22 111:15 117:13, 25 118:4 usual 105:17 264:23 usually 61:23 237:5 245:7, 19 264:22 utility 264:25 275:20 277:10 280:6, 10, 11, 13 286:23 utilization 86:19 < V > VA 46:15, 20 47:2 49:16 50:1, 3, 8 52:1 53:21 55:1 190:8, 17 valid 130:9 288:23 VALSARTAN 1:5 7:7 83:1, 4, 15 84:18, 19 85:1 87:6, 8, 11, 12, 13 88:1, 2, 3, 5, 10, 13, 16, 17, 21, 24 89:18, 25 90:1 108:4 110:7, 9, 11, 15 115:20
--	--	--	---	--

116:15, 22 130:2 158:12, 16 163:8 164:3, 19 177:2, 3 178:21, 22 179:19 188:1, 2 189:12, 13, 16, 19 190:1 191:7 198:12, 19, 20 199:6, 13, 14, 17, 18 200:16 201:1, 6, 10 202:22 203:6 251:21, 23, 25 252:2, 3, 6, 10, 12 253:4, 15 254:14, 21 255:21 256:2, 6, 12, 17, 23 257:4, 10, 19, 25 258:8, 9, 10, 13, 20 259:21 260:5, 21 270:4, 17, 22, 23 271:12 273:5, 6, 13, 17, 20, 22 274:1, 7, 9, 24 275:3 276:17 279:1 281:5, 19, 22 282:3, 6, 8, 11, 24 284:20 290:6 valsartan- containing 158:17 171:16 199:5 valsartan's 278:19 valuable 266:16, 23 Valuations 5:20, 24 value 213:25 218:19 248:25 249:4 257:4 258:19 259:6, 9, 11 261:14, 17	262:17, 21 265:12, 19 267:19, 22, 24, 25 269:13, 17, 19, 20, 21, 22, 24, 25 270:5, 8, 12 272:11, 19 273:3, 5, 13, 16, 19, 22 274:8, 10, 20 275:2, 13, 19, 20, 22, 23, 24 276:8, 11, 22 277:6, 12, 17, 20, 24, 25 278:1, 2, 19 279:1, 4, 9, 12, 19 280:23 281:6 286:18, 23 287:3, 5, 8, 16, 22, 23 288:2, 4 291:3 values 206:15, 16 228:23 274:18 276:1 278:16 Vanderbilt 2:21 variable 215:7 229:4, 7, 8, 14 variables 152:6 228:19 variants 156:24 227:9 229:8 variation 125:9 137:8, 11, 14 146:22 147:1, 5 156:12, 25 174:18, 19, 21 175:10, 13, 19 176:1, 12 178:23, 25 179:3, 4, 5, 7 187:11 193:22 195:6, 22 196:13, 14, 15, 17, 18, 22 197:1 220:3	222:5, 19 227:10 228:7, 19 292:1 variations 192:22 193:6 220:15, 18 variation's 137:17 varies 280:14 variety 46:14, 17 49:17 247:25 various 31:16, 18, 20, 21 32:1 44:25 54:3 76:1 85:17 92:15 97:23, 24 98:11 116:14 142:6 147:21, 22 168:6 214:9, 15 219:13 235:16 251:7 260:8 281:3 vary 51:19 187:23 188:2, 4, 8, 10, 23 190:23 196:4 220:21 237:10 279:21 vast 142:9 Vearrier 117:8 vector 232:5 verbatim 237:13 version 101:5 186:22 versions 101:9 versus 84:18 92:15 100:10 105:11 149:15 189:9 198:7, 19 201:10 202:11 206:15 209:17 222:22 235:24 236:2	257:12, 16 280:10 288:25 vet 243:18 244:7 Veterans 44:10 50:8, 10, 11, 12, 14 video 7:5, 6 10:17 videographer 4:19 7:1, 3 63:5, 8 107:7, 10 159:22, 25 204:21, 24 243:3, 6 281:12, 15 285:25 286:4, 7 290:12, 15 292:21 VIDEO- RECORDED 1:15 Videotaped 5:14 Vietnam 50:12 view 115:9 viewed 93:12 visits 247:20 voluntary 147:17 < W > wait 67:3, 5 walk 39:2 42:3 118:5 walked 139:4 WALKER 4:10 Wallack 4:2 want 9:9 10:23 17:20 24:15 27:9 33:1 35:21 37:25 38:3, 23 45:11 54:7 58:17 59:7 63:12 66:23, 25 76:22 82:20 83:7 86:8 90:13 96:2	104:9 107:15, 20 111:8 120:9 121:15 129:1 132:18 133:22, 23 134:3 136:15 145:11, 24 153:23 156:9 157:2 159:5, 7, 14 160:3, 5 161:7 165:25 168:5 174:6 186:18 190:10, 19 199:8, 19 204:13 205:2 213:10 216:3 217:20 230:1 246:5 271:10 281:10 286:3 287:13 289:8, 9, 19 290:11 291:18 wanted 13:4 39:24 65:14 67:7 80:22 87:9 165:23 166:2 195:18, 21 ward 55:2 wards 45:1 47:5 wars 50:11, 15 Washington 2:10 3:3 144:3, 7 waste 230:1 watched 10:16 waves 50:14, 18 way 23:12 31:13 32:7, 8 40:17 44:5 45:20 51:11 53:3 55:1 71:6, 7 90:19 93:22 102:16 118:5 124:19 126:1 129:23 138:9, 12 153:15, 20
---	---	---	--	--

180:17 198:5 214:7 215:23 238:2 242:14, 19 253:24 258:14, 22 266:22 270:8 275:25 278:18 297:20 ways 52:22 62:24 84:15 99:18 122:20 125:1, 6 207:19 214:5, 6, 17 230:24 251:10 269:6 275:15, 17, 19 276:3 284:6 wearing 227:1 website 80:22 101:10 254:21 week 10:7 47:12, 25 weeks 21:2, 3 44:23 45:4 46:25 47:6, 7, 14, 17, 18, 19, 21 48:17, 18 49:3, 6, 7 51:8, 13 week-shift 51:16 weigh 29:15 weighed 269:13 277:13 weighting 186:20 welcome 217:10 218:10 286:12 welfare 151:12 Well 14:24 22:6, 11 23:11 33:11 35:25 42:20 59:1 61:22 65:1 67:3 80:12, 16 87:7 90:17 92:16 93:2 100:21 105:9 118:3 132:13	134:19 139:2 156:12 158:10 160:22 161:17 162:2, 13, 18 165:24 166:16, 25 169:12 174:16 177:8, 17 198:4 210:1 214:1 215:8 242:1 246:4 263:23 269:19 276:19 went 40:20 139:8 181:25 217:2 we're 9:5, 21 10:15 22:4 59:17 62:21 63:5 88:1, 2 89:12 158:25 159:22 166:23 170:21 175:13, 16 178:3, 4 180:11, 25 200:9 204:21 208:15 209:14 229:22 236:16, 22 243:3 281:12 286:5 290:12 western 136:22 137:4 we've 12:2, 5 35:19 102:5 106:23 115:4 120:3, 20 133:21 243:1 whatsoever 272:11 275:1 whistleblower 64:17, 19 65:4 White 250:23 Whiteley 2:5 wide 46:17 49:17 137:8, 10	widespread 57:22 wildly 179:11, 12 290:7 291:15, 21 292:5 WILLIAM 4:2 willing 266:4, 12 275:8 willingness 261:18 262:18 264:24 265:18 279:7 280:23 288:1, 3 wishes 56:18 within-entitled 297:11 WITNESS 1:16 7:13, 23 14:20 15:4 18:14, 24 19:2 25:9 26:17 28:15 29:2 30:24 32:20 33:5, 22 34:16 35:1 52:17 57:20 58:4 59:25 60:11 62:11 64:7 65:16 66:23 67:13, 16 69:11 70:6, 23, 25 71:13 72:25 78:2 83:22 84:12 85:4 86:4 90:11 91:9 92:11 94:23 95:9, 19 99:1, 9 104:4, 23 109:23 111:7, 12 114:24 116:12 121:15 129:8 130:17, 22 131:23 132:13	133:14 135:8, 19, 23 136:2 137:17 142:1 145:11, 22 147:12 149:11 150:13, 25 151:22 152:2 154:15 156:9 157:7, 20 159:8, 12, 14 161:13, 20 162:5, 15 164:12 166:11 167:17 173:13, 16 174:6, 25 175:24 178:3 184:2 185:13 186:12 188:25 191:5 192:25 193:8 197:9 203:23 205:24 206:12 209:8 216:11 218:6 224:23 232:19 233:12 235:11 238:14 240:18 242:18 246:7 252:25 255:25 256:11, 19 257:1 259:4 262:3, 5 268:13, 25 271:22 275:6 276:25 277:4 282:5, 18 283:9, 18 284:24 285:2 289:19 294:1 297:9, 12 WITTLAKE 2:20 17:12 Wittlake@gtl aw.com 2:23	Wmurtha@hill wallack.com 4:4 Women's 39:23 42:6 43:20 44:14 word 159:6 207:1 words 12:4 19:20 23:1 54:7 195:5 238:6 251:22 257:17 work 14:24 18:12 21:25 22:25 28:12 34:10, 11 37:2 38:8 40:13 44:15 48:5, 9, 10 49:6 51:17 52:1 53:1, 14 63:4 69:21 70:9 81:19 90:5 91:5 142:4 157:5 161:23 163:2 183:12, 13 198:25 205:20 206:8 211:14, 19 213:2, 21 214:2 225:3, 5, 10 232:17 243:19, 21, 24 251:3, 14, 17 worked 13:24 14:1 15:20 16:4 24:2, 4 26:6 42:19, 21, 23 52:4 70:12 250:7, 11, 14, 19, 22 251:7 working 15:2 23:8, 24, 25 25:14 38:13, 19 51:9 70:13 73:8, 10 81:25 82:2, 5, 8, 12
--	---	--	---	---

93:2 100:3 101:3 102:5 183:13, 16 229:12 230:6, 10 243:20 works 10:17 31:1 47:7 51:11 53:3 55:1 183:23 world 133:6 156:13 223:9 233:8 266:17 280:14, 25 worried 62:23 worry 229:6 worse 196:6, 8 worst 110:5 worst-case 110:5 worth 258:7, 8, 17 276:18 worthless 274:25 276:17 worthlessness 29:16 Wow 133:9 write 206:22 243:13, 15 261:10 265:10, 14 277:21 279:18 282:8 writing 29:14 92:7, 11 written 35:10 92:13 231:2 288:6 wrong 54:15 110:23 115:10 126:11 209:1 292:1 wrote 243:15, 16 < X > x-ray 105:12, 13, 15, 16, 19, 23 114:4 155:23	x-rays 104:25 < Y > yeah 19:25 27:1 28:18 31:3 32:23 34:22 37:8, 20 41:7, 8, 11, 13 43:14, 15 48:1, 16 51:2 54:18 58:4, 9 59:25 60:14 62:25 63:21 65:6, 21 66:7, 15 67:2, 14 69:2, 5 72:18 73:14 78:2, 4 81:11 89:23 90:16 95:12 97:7 100:1, 6 101:9 103:17 106:21 107:3 110:12, 24 111:2 112:22 119:3 121:18 132:9, 25 133:3, 4, 5, 8 136:5 141:18 142:20 148:7, 11 151:22 152:10 153:18 154:1 158:21, 24 159:2, 9, 13 160:22 161:1, 13 162:8 163:11 166:11 168:18 176:19 179:14 181:17 182:7 186:16 187:3 191:15 193:3 202:4 204:16, 19 207:6, 7, 18 214:4 215:22 217:20, 21 224:24 226:25 227:2,	16 229:24, 25 230:4, 16 231:22, 24 234:11 239:5 240:21 242:22 262:4 271:25 283:13 year 9:18 23:16, 20 25:19 42:17, 22, 25 43:6, 22 46:25 47:6, 8, 12, 14, 18, 19, 21 48:3, 6, 7 49:3, 7 51:6, 9 100:23 101:4 138:14, 24 141:6, 7 146:25 152:4 177:18, 23 178:11 182:2, 10, 12, 16 183:9 184:9, 18 185:3, 11, 13 222:15 223:10 284:20 yearly 86:22 years 24:8 39:18 48:4 51:8 97:12 104:20 147:5 158:18 163:8, 20 164:5, 9, 20 182:3 183:4, 9, 10 184:19 Yep 10:21 110:25 129:11 163:12 176:7, 8, 9 206:25 226:1, 19 230:15, 17, 18 234:17 262:13 289:12 YOLO 297:2 York 2:14, 21 < Z >	zero 131:11 215:7, 9 228:23 229:2, 6, 9 237:1, 3 279:1 Zhejiang 4:4 Zhu 102:13 Zirui 5:19 Zoom 244:6
---	--	--	---